> Ontario
> Ontario Health Quality Council

QUALITY MONITOR

ONTARIO HEALTH QUALITY COUNCIL

2010 REPORT ON ONTARIO'S HEALTH SYSTEM

The quality of our health system is the responsibility of every Ontarian. We hope this report will help you understand the publicly funded health system better, and give you the information you need to keep up pressure for improvement.

After all, it's your health and your health system.

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1.1 Executive summary

Ontarians are fortunate to have a publicly funded healthcare system that provides a comprehensive range of services for all. To make sure the system is working properly, the provincial government set up the Ontario Health Quality Council (OHQC) as an independent agency in 2005 to monitor all aspects of the system, to report to the people of Ontario on its quality and to encourage continuous improvement.

Our fifth annual report — Quality Monitor — examines Ontario's healthcare system with our most critical eye. We note changes for the better or for the worse and report them to you. More importantly, we compare how we are doing to the best results elsewhere and provide an opinion about whether quality is good or needs improvement.

How we completed this report:

The OHQC routinely monitors indicators and data sources used throughout Ontario, Canada and internationally, and works with its Performance Measurement Advisory Board to select indicators for this report. Data is drawn from sources that include Ministry of Health and Long-term Care (MOHLTC) databases, Census Canada, international surveys from the Commonwealth Fund and many others. The Institute for Clinical Evaluative Sciences (ICES) helped us conduct many of the data analyses. Researchers, clinical experts and healthcare executives reviewed our findings for accuracy and validity.

Key features of this year's report:

Broader coverage of the nine attributes of quality

The nine attributes that Ontarians tell us reflect a high performing health system include: accessible, effective, safe, patient-centred, equitable, efficient, appropriately resourced, integrated and focused on population health. This year, we have added new indicators to increase our insight into these nine attributes across all sectors of healthcare. They include:

- Expanded analysis of alternate level of care (ALC) bed days in hospital

- More information on safety and staying healthy in long-term care (LTC) and home care

- Expanded analysis of hospital infections and adverse events

- Addition of maternal and child health, sexual health and injuries

- Expanded coverage of mental health, including suicide, intentional harm and depression in LTC and home care

Compact format

We describe the entire healthcare system in 35 themes, with two pages per theme. Most indicators have a mini-graph to indicate progress or lack of improvement over time and a one- to three-sentence description of our interpretation of the data. Information on how indicators were defined and calculated and more detailed tables of actual data points can be found in the technical appendix to this report.

Mini-summaries for leaders and staff in different sectors and people with different conditions.

There are one to three-page summaries of key findings for hospitals, LTC, home care and primary care, as well as brief summaries for cardiovascular disease, diabetes, mental health and cancer. Each summary includes questions to ask of leaders or caregivers for self-reflection. Summaries of key differences for each local health integration network (LHIN) have also been included.

Root cause analyses and change ideas

Traditional public reporting simply gives indicator results and whether they are above or below average. Readers, however, are left wondering why these problems exist and what can be done about them. To counter this, we have included a root cause analysis with each theme, as well as ideas for improvement related to the root causes, as identified in the literature.

Best practice stories

We have identified local stories of improvement, selecting those that had a clear aim, measures, change ideas and run charts showing substantial improvement over a short period of time. These success stories are closely linked to the key findings of the report, demonstrating that improvement is possible.

Our key findings:

There are serious problems with how patients move through the healthcare system, from the emergency department to hospital to LTC. Patients wait too long and the system is wasting resources.

Wait times for an LTC bed are too long — an average of 105 days, or more than three months. For people waiting while at home, the wait time is 173 days (almost half a year). Wait times have tripled since the spring of 2005.

Wait times for LTC affect hospitals, since frail individuals who cannot go home typically spend 53 days in hospital waiting for placement. As a result, currently 16% of all hospital beds in Ontario are occupied by patients designated as ALC, who do not need to be in hospital. Indeed, every increase of 3.3 days of average time spent waiting in hospital for LTC placement is associated with a 1% increase in the proportion of beds that are ALC. Not only is this a waste of hospital resources, but it puts patients at risk because they are being cared for by staff who are not trained to deal with their needs. This problem has gotten much worse in the last three years.

The backlog of ALC patients in hospital is one of the key factors affecting emergency department wait times. Patients admitted to hospital from the emergency department spend far too much time waiting for a hospital bed after the decision to admit — typically, 3.4 hours. They occupy a bed in the emergency department while waiting, which in turn slows the flow of less acute patients through the emergency department. In 2009, 25% of patients spent more time in the ED receiving care than the recommended target. The majority of patients did not get to see a doctor within the timeframe recommended by national experts. About 6% of them left the emergency department before being seen, likely because

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

they were tired of waiting. This indicator is at its worst level in the past five years. Overall, our emergency department wait times are among the worst in the world.

We are concerned that the problems with patient flow may have some indirect impact on surgical wait times. On the positive side, wait times have decreased for cataract surgery and hip and knee replacements and are generally good for cardiovascular procedures. However, for overall surgeries, our healthcare system struggles to meet wait time targets for urgent (priority 2) cases. For example, only 53% of urgent cancer cases are completed within the two-week target. We do not know all of the reasons for these waits, and recognize that there are likely multiple, complex causes. However, one issue to consider is that priority 2 cases are generally more complicated and may require timely access to an ICU bed after surgery. If hospital bed capacity is very tight because of the ALC bed situation, that could make it more difficult to schedule these urgent cases. Last year, we reported that one hospital (North York General Hospital) ensured that all patients got their urgent surgery on time by implementing improvements in the scheduling process, as well as ideas to reduce ALC beds. In this example, addressing these flow issues made a huge difference.

Numerous activities are currently taking place to improve patient flow. Within the emergency department, there is a Process Improvement Program to help hospitals improve their internal processes, as well as public reporting of wait times, a pay-for-results initiative and a nurse practitioner program to reduce emergency department visits from LTC homes. These are all strategies that have promise and we look forward to reporting on their impact in future years. However, they do not address one of the key root causes: the backlog of people waiting for LTC placement.

If this backlog is the origin of the problem, then what are the ideas for improvement? Last year, we described a case study from the health region around Lethbridge, Alberta, which kept its wait times to 28 days and used one-third fewer LTC beds compared to Ontario. That region had different publicly funded options for assisted living or supportive housing, where people could live in a home-like environment with 24-hour assistance when needed, if they required less care than that provided by LTC but more than that offered by home care. There may be important lessons for Ontario from this and other similar examples. Such a strategy would also require that safeguards and monitoring be in place to ensure that best standards for quality of care are maintained in these settings.

We have seen solid improvements in cardiovascular disease care and cautious signs of improvement in care for diabetes and other chronic diseases. There is still, however, major room for improvement.

The good news is that for heart attacks, there has been a steady decrease over the past few years in the incidence (rate of new heart attacks in the population), mortality rate and hospital readmission rate. For angina, the hospitalization rate has decreased sharply, by more than half in the past six years. For elective cardiovascular procedures (bypass surgery, angiography and percutaneous coronary intervention (balloons or stents to open the artery), about 95% of cases are done within the target

timeframe, which is excellent. (As noted previously, there is still room to improve with more urgent cases.) Although we can still do better, more patients with heart attacks are filling prescriptions for the right medications, including cholesterol-lowering drugs, beta-blockers and angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin-receptor blockers (ARBs). For congestive heart failure (CHF), hospital admission rates are declining, which is good news, but readmissions are still very common, mortality remains high and we can increase the use of evidence-based medications further.

For diabetes, we are encouraged that the rates of serious complications, such as heart attacks, strokes and amputations, are now starting to decline. Many more people with diabetes are on life-saving medications, including cholesterol-lowering drugs and ACEIs. However, there is still vast room to do better. The use of the right medications should be higher still, and many people with diabetes are not getting the right monitoring (e.g., regular eye and foot checks).

We are also pleased with the decline in admissions for asthma in Ontario. However, admissions and readmissions for chronic obstructive pulmonary disorder (COPD), including emphysema, are still high.

While improvements in care are encouraging, we note that progress has been stalled for the past three years in addressing unhealthy behaviours that could lead to chronic diseases. These lifestyle activities include smoking, heavy drinking, obesity, physical inactivity and low consumption of fruits and vegetables. Although there are people of all socioeconomic groups who engage in these unhealthy behaviours, those with low incomes, less than high school education or who live in rural areas are at higher risk of doing so. People in these groups face many barriers to adopting healthy behaviours, including lack of access to or knowledge of opportunities for affordable physical activity and healthy food options. It will be important to tailor strategies for the most vulnerable populations in order to accelerate progress on chronic diseases.

Further improvements to chronic disease management will also depend on better engagement of patients in their own care and better coordination and communication among providers or institutions. For example, only one-quarter of patients who leave hospital receive all the information they need, such as what danger signs to watch for, when to resume usual activities, and an explanation of the purpose of medications to take at home that they can understand. Many physicians report delays in getting information from hospitals or specialists. Addressing these issues could help to reduce readmissions or other complications.

Ontario has made significant improvements in the use of information technology, particularly in the use of electronic medical records (EMRs) by doctors in the province. However, we still lag far behind other countries in the adoption of these tools, and we still do a poor job of sharing information among doctors, hospitals and other settings to create a true electronic health record (EHR).

The proportion of family doctors who have an EMR system has risen from 26% in 2007 to 43% in 2009 due to funding and support from the OntarioMD program. This represents important progress in a short period of time. However, we still lag behind countries such as the UK, Australia and the Netherlands, where 95 to 99% of family doctors have an EMR

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1.1 Executive summary

system. We are also concerned that not all doctors are using all the functions of the EMR to improve quality, such as flagging for possible drug errors or sending reminders about tests.

Spending in information technology across all health sectors has steadily increased, which is also encouraging. Hospitals have made big investments, particularly associated with the ability to store, retrieve and share digital files of diagnostic images (e.g., X-rays). However, only 9% of our hospitals send information electronically outside the hospital — for example, to other hospitals, doctors or home care agencies.

The term EMR generally refers to information systems within one location (e.g., a doctor's office or hospital), while EHR refers to a system where information from multiple sources can be pooled and/or shared. It is important to recognize that most of the benefits of information technology will not be realized until we create the EHR. When that happens, Ontarians should see fewer unnecessary tests because the old results could not be accessed, fewer drug errors because no one was quite sure of all the medications being taken, and fewer mistakes or delays in care when someone is seen by a new doctor or healthcare provider because all the information about their medical history was not available.

Problems with access to primary care persist, despite major investments in recent years.

About 7.1% of Ontarians continue not to have a family doctor; that's roughly 730,000 people. About half of these individuals do not have a family doctor and are actively looking but can't find one. For people who already have a family doctor, only half can see their doctor the same or next day when sick. Compared to 10 other countries, Ontario and Canada have the worst record on timely access to primary care. Almost nine in 10 Ontarians say they are waiting too long to see their doctor, and this indicator has gotten worse in the last three years.

The lack of improvement on access is perplexing, given that, at the same time, the supply of health professionals has been steadily increasing. In the last six years, the per capita supply of family doctors has increased by 6.2%, and that of nurse practitioners by 82%. There have also been

major investments in training positions for other health personnel, such as pharmacists, midwives and registered practical nurses. Since 2005, Ontario has created 150 family health teams (FHTs), which provide interdisciplinary care and extended hours of service to improve access.

Why, then, has there been no improvement in access? We will not know the exact answer until more information comes in, such as an upcoming external evaluation of the FHT initiative. One possibility is that while adding more personnel and creating team structures is important, those two ingredients do not necessarily mean that the actual teamwork is as good as it could be, or that health professionals are working to their full scope of practice. It will be important to ensure that all primary care practices design scheduling, work flow and assignment of tasks to different team members in a way that maximizes efficiency, reduces wasted time and provides better quality of care. We report two case studies of primary care practices in Ontario that achieved near-zero wait times and major improvements in chronic disease management using the resources they had. There is no reason why these examples could not be repeated throughout the province.

While there has been some progress in reducing hospital-acquired infections, there are still huge opportunities to do better.

On the positive side, Ontario has led other provinces in public reporting of hospital infection rates. *C. difficile* infection rates have been decreasing gradually over the past year. However, handwashing rates are still far too low — only 53% at the moment just before a health professional sees a patient. Infections such as ventilator-associated pneumonia and central line infections continue to occur in our hospitals. These infections are associated with high mortality rates, and yet many leading institutions in North America and even here in Ontario have eliminated them through adherence to infection control practices. There is no reason why all hospitals in Ontario could not do the same. Achieving this will require strong leadership among hospital executives, boards and LHINs to drive a profound shift towards a culture of safety within their organizations.

1.2 Attributes framework

The attributes of a high-performing health system.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

ONTARIANS WANT THEIR HEALTH SYSTEM TO BE:

ACCESSIBLE

People should be able to get timely and appropriate healthcare services to achieve the best possible health outcomes. For example, when a special test is needed, you should receive it when needed and without causing you extra strain and upset. If you have a chronic illness such as diabetes and asthma, you should be able to find help to manage your disease and avoid more serious problems.

EFFECTIVE

People should receive care that works and is based on the best available scientific information. For example, your doctor (or healthcare provider) should know what the proven treatments are for your particular needs including best ways of coordinating care, preventing disease or using technology.

SAFE

People should not be harmed by an accident or mistakes when they receive care. For example, steps should be taken so that elderly people are less likely to fall in nursing homes. There should be systems in place so you are not given the wrong drug, or the wrong dose of a drug.

PATIENT-CENTRED

Healthcare providers should offer services in a way that is sensitive to an individual's needs and preferences. For example, you should receive care that respects your dignity and privacy. You should be able to find care that respects your religious, cultural and language needs and your life's circumstances.

EQUITABLE

People should get the same quality of care regardless of who they are and where they live. For example, if you don't speak English or French it can be hard to find out about the health services you need and to get to those services. The same can be true for people who are poor or less educated, or for those who live in small or far-off communities. Extra help is sometimes needed to make sure everyone gets the care they need.

EFFICIENT

The health system should continually look for ways to reduce waste, including waste of supplies, equipment, time, ideas and information. For example, to avoid the need to repeat tests or wait for reports to be sent from one doctor to another, your health information should be available to all of your doctors through a secure computer system.

APPROPRIATELY RESOURCED

The health system should have enough qualified providers, funding, information, equipment, supplies and facilities to look after people's health needs. For example, as people age they develop more health problems. This means there will be more need for specialized machines, doctors, nurses and others to provide good care. A high-performing health system will plan and prepare for this.

INTEGRATED

All parts of the health system should be organized, connected and work with one another to provide high quality care. For example, if you need major surgery, your care should be managed so that you move smoothly from hospital to rehabilitation and into the care you need after you go home.

FOCUSED on POPULATION HEALTH

The health system should work to prevent sickness and improve the health of the people of Ontario.

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1.3 Hospital sector summary

Summary for boards, CEOs, senior management and clinical leaders.

Topic area	Key facts	Questions to ask at the board, senior management table or quality committee
1. ALC (section 7.2)	• 16% of beds are designated as ALC and the problem has grown worse in the last three years.	• How quickly are we getting discharge planning involved? • Are we identifying people at high risk for becoming an ALC patient? • Are we identifying people at high risk for being ALC early enough (e.g., when they come to the emergency department for the first time)? • Are we labelling people as needing LTC too early, before they have had a chance to recover? • Are we using utilization management tools to objectively measure when someone does not need to stay in a hospital anymore? • Do our ALC patients really need an LTC bed or supportive housing? If the latter, are we working with others to make sure these resources are available in our community? • Are there frail or elderly patients in our practice whose needs have not yet been assessed by a community care access centre (CCAC)?
2. Emergency department wait times (section 2.1)	• Although there are many efforts to reduce wait times, there has been no improvement yet and we are still not meeting targets. • Approximately 25% of people spend more time in the emergency department than is desirable. • Six out of every 100 Ontarians who visit the emergency department leave without being seen by a physician.	• Have we considered all the different ideas for improving patient flow within the emergency department (e.g., fast-track area, improved layout, chairs for acute patients, flexible human resources scheduling, spreading elective, non-urgent and surgical cases more evenly throughout the week, information systems to track patients and results, etc.)? • Are we moving patients who do not need to be receiving care in the hospital to the right place as quickly as possible (see 1 above)? • Are we redirecting/connecting people who are using the emergency department as the first place to get healthcare to appropriate services that will reduce their chances of coming back (e.g., mental health patients and people without a family physician)?
3. Surgical and CT/MRI scan wait times (section 2.3)	• Wait times are good for cataract and cardiovascular surgeries and have improved for hip and knee replacements; however, there is still room to do better. • The largest area for improvement is urgent (priority 2) cases for all surgeries and CT/MRI scans (e.g., 50% of urgent cancer surgeries are not done within the recommended timeframe). • CT/MRI scan waits are still too long — only one-third of MRI scans are done on time despite having doubled the number of scans in the last six years.	• What are we doing to make sure all the hand-offs in arranging scheduling are made consistently and without delay? • Do we measure demand and supply and do we know if we are in balance? Have we ever done queue-clearing blitzes? • For urgent cases, what is the root cause of delays — poor hand-offs and organization, lack of standardized processes and/or lack of an intensive care unit or other bed to admit to? (If the latter, see strategies under ALC.) • For CT/MRI scans, are we taking a hard look at the appropriateness of tests being done? Are we using new tools to help us do that (e.g., appropriateness scales)?

Topic area	Key facts	Questions to ask at the board, senior management table or quality committee
4. Safety — hospital infections and other areas (sections 4.1, 4.2 and 4.3)	• Hospital standardized mortality ratio (HSMR) rates have fallen for the second year in a row, with 71% of hospitals reporting a decrease in their HSMR score over the past year. • In-hospital mortality for heart attacks and strokes has also decreased. • C. difficile infection rates have decreased in the last year; however, we can still do better. • Hand hygiene remains an area of concern — only half of healthcare providers correctly wash their hands. • Incidents of ventilator-associated pneumonia and central line infections continue to occur in intensive care units. We can do better, as many hospitals have eliminated these incidents completely. • In one out of every 200 surgeries, patients continue to get potentially life-threatening blood clots. There has been no improvement and we can do better.	• Do we have proper surveillance and incident reporting systems in place? • Are we regularly using checklists, standardized order sets or protocols to minimize reliance on memory? • Are we following best practices in relation to environmental cleaning, hand hygiene and other infection control best practice documents? • What are we doing to ensure that all staff and physicians are using proper handwashing techniques (e.g., education materials, convenient location of hand-washing stations and sanitizers with lotion, audit and feedback to staff on compliance)? • Do we have a physician champion to gain buy-in for infection control practices? • Are we promoting and measuring a culture of safety in our hospital? Do people feel comfortable speaking up if they see a safety issue? • Are we encouraging patients to ask questions about safety? • Are we educating patients on their role in safety? • Have we considered the use of automated order sets and protocols, along with ensuring compliance through hospital physician credentialing processes? • If we use contractors for maintenance and cleaning, are safety standards part of the agreement and how are they enforced?
5. Effectiveness/evidence-based practices (section 3.1)	• There has been some increase in the number of patients filling prescriptions upon discharge — most notably, 86% of acute myocardial infarction (AMI) patients are prescribed a statin upon discharge. • Making sure patients leave hospitals on the right medication will help reduce readmission rates.	• Do we have information technology systems in place to remind doctors of standard protocols and treatment plans or to track compliance with guidelines? • Are we educating our patients and their families about the importance of filling and taking their prescriptions? • Are we using checklists or standardized order sets at admission and discharge?
6. Patient-centred/discharge hand-offs (sections 5.1 and 9.1)	• One in three patients is sent home from the hospital and emergency department without all the information needed — there is room for improvement. • Ontario does a poorer job than most countries in making sure discharge summaries are sent quickly to family doctors.	• How quickly are we transferring discharge summaries to family physicians? • Are written discharge instructions routine for all of our patients (including warning signs, whom to call, etc.)? • Are we ensuring that our patients understand their course of treatment after discharge? • Do we make sure all patients being sent home have follow-up care arranged?
7. Readmissions (section 3.3)	• Readmission rates have decreased for heart attacks, CHF and asthma over the past few years, but there is still room to improve. • Conditions with the highest rates are CHF and COPD.	• To reduce deterioration and the risk of readmission, are we making sure patients have all the information needed when they are sent home? (see 5 and 6 above) • Are we making sure patients have the right medication and treatment when sent home? (see 5 above)

1.3   Hospital sector summary

Topic area	Key facts	Questions to ask at the board, senior management table or quality committee
8. EHR adoption (section 8.2)	• We have made progress in implementing information technology in hospitals, but improvements are still needed. • Hospitals have made major improvements in the ability to store and retrieve digital diagnostic images such as X-rays. • Ontario lags behind the US for EMR adoption; only 50% of hospitals have electronic patient records and fewer than one in 10 send information electronically to doctors and home care services in the community.	• Do we have the support of our physicians in the adoption of information technology? Who are our physician champions? • What percentage of our annual budget are we dedicating to the adoption of information technology? • What are we doing to improve our hospital's ability to share information with other hospitals, doctors and home care? • What proportion of our hospital medical record is populated through computerized data entry versus paper records?
9. Worker health and safety (section 8.3)	• There has been no major improvement in injury rates in the past six years. There is much room for improvement in this area. • Although hospitals have lower injury rates than other sectors, such as LTC, overall healthcare has higher injury rates than other industries, such as construction and mining.	• Do we have mandatory safety training for all new staff? Have all staff and physicians received this training? • Have we done the proper risk assessments to ensure a safe environment? • Do we promote and support healthy lifestyles in our organization? • Do we recognize jobs well done and high performers? • Have we purchased safety equipment to reduce the number of injuries? If not, have we budgeted for the purchase of these systems?
10. Hospitalization for ambulatory care sensitive conditions (section 3.2)	• There has been a steady drop in admission rates for angina, asthma and CHF; however, we believe there is still an opportunity to reduce these rates further.	• Are we educating patients about their own role in treating their chronic disease? Have we simplified care plans, making them easier to follow? • Do we need a strategy to help engage primary care providers, specific to the community, to improve chronic disease management so that patients do not end up in our hospitals?
11. Hospital finances (section 7.1)	• More than 40% of hospitals were in a deficit position this year, with one in every two community hospitals having a deficit. • Hospitals continue to struggle to manage their current ability to pay bills without having to borrow.	• While the [illegible] services, [illegible] thought [illegible] system [illegible] (e.g., un[illegible] staffing, [illegible])

1.4 Home care summary

Topic area	Key facts	Questions to ask
1. (illegible) (sections 2.4 and 7.2)	Despite a major increase in LTC beds, overall wait times for an LTC bed have risen since the spring of 2005 and are now at 109 days (over three months). For those waiting in the community, the wait is 173 days; for those waiting in hospital, it is 53 days. The latter contributes to the serious and growing problem of ALC beds in hospitals — one-sixth of hospital beds are occupied by someone who does not need to be there. • One in four people placed in LTC could potentially be cared for in alternative settings.	• Is home care involved early during the hospital stay, for vulnerable clients? • What additional home care services are needed to keep people out of LTC? • What alternatives to LTC are there for those who do not need the full range of LTC services? More home care? Assisted living or supportive housing options? • Are decisions to apply for LTC being made prematurely for hospital patients, before they have had a chance to recover?
2. Falls (section 4.6)	• Of people receiving care in the community, 25% have fallen within the last 90 days. There is likely room to improve.	• Are we checking for clutter or poor lighting in the home? Are there safety bars? • Are we encouraging the use of mobility aides (e.g., walkers) and checking for proper use? • Do high-risk clients get rehabilitation to improve strength and balance? • Are any clients on a drug with side effects that might cause a fall? If so, have we discussed safer alternatives with the doctor?
3. Pressure ulcers (section 4.6)	• Of people receiving care at home and in the community, 1.4% have new stage 2 to 4 pressure ulcers every six months.	• Do vulnerable clients get risk assessments for ulcers? Are they up to date? Are staff regularly monitoring for early signs of ulcers? Are high-risk clients getting special padding to avoid ulcers on pressure points?
4. Injuries (section 4.6)	• 12% of home care clients have had unexplained injuries, burns or fractures in the past six months. There is room to improve.	• Are we checking for safety hazards in the home (e.g., hot water temperature, electrical outlets and clutter)?
5. Bladder incontinence (section 5.6)	• 46% of clients have had a decrease in bladder function, or no improvement of a past bladder control problem, over the past six months.	• Are home care staff teaching "prompted voiding" protocols or bladder-strengthening exercises to clients, to prevent deterioration in bladder control? • Are clients offered tools to help, where foods (e.g., catheters)?
6. (illegible) (section 5.6)	• 46% of clients experience a new problem with normal reasoning, thinking (illegible).	• Are home care staff being offered (illegible)?
7. Mental health (section 5.6)	• 19% of clients show signs of serious depression (e.g., (illegible) sadness and sleeplessness) from normal activities.	• Is home care managing the mood problem or coordinating treatment of depression with the family doctor?
8. Pain control (section 5.6)	• Of home care clients who have pain, 22% have pain that is not well controlled. There is likely room to improve.	• Are home care clients getting frequent assessments of pain? • Are home care workers communicating information about pain to the doctor so that treatment plans can be adjusted?
9. Readmissions (section 3.3)	• Readmission rates for heart attacks, CHF and asthma have decreased in the past five years. However, they remain high for CHF and COPD (e.g., emphysema). There is still room to improve.	• Are we making sure clients leave hospital on the right medications and know what warning signs to look out for and whom to call for help? • Are we screening and monitoring high-risk clients who are at risk of readmission? • Are clients getting the right monitoring at home (e.g., daily weight-taking for CHF clients)? • Do we have a process to ensure medication reviews are done routinely (e.g., MedsCheck)?

1.5 Primary care summary

Topic area	Key facts	Questions for physicians, nurses and other primary care practitioners to ask themselves
1. Access to primary care (section 2.2)	• There has been no change in the past three years in the percentage of Ontarians without a regular family doctor. Roughly 730,000 adults are without a doctor, with half of them actively looking. • Nine in 10 Ontarians think they wait too long for a family doctor appointment. Only 53% of Ontarians can see their doctor on the same day or next day when sick — this standing is the worst among 11 major countries surveyed.	• Are we tracking wait times in our clinic? • Are we using advanced access, the system of scheduling appointments, and managing patient flow to reduce or eliminate wait times for appointments? • Could we reduce unnecessary repeat visits to free up more time to serve people better (e.g., by giving lab results over the phone instead of requiring a visit)? • Are our processes as efficient as they could be? For example, is each exam room set up exactly the same way? Can things be relocated to reduce walking around? • Are we working in a team? If yes, are we using each team member to his/her fullest capacity? What tasks could be shifted from one team member to another?
2. Surgical and CT/MRI scan wait times (section 2.3)	• Wait times for some surgeries are good or improving (e.g., cataract surgery, hip and knee replacements and cardiovascular procedures), but there is still room for improvement overall. • Wait times are still too high for CT/MRI scans.	• For CT/MRI scans, are all the tests we are ordering necessary? Do we find ourselves pressured into ordering tests that are not needed? What could we do about that? • Do we ever use the Ontario Wait Times website to find places that can do a surgery sooner if the patient wants this?
3. ALC (section 7.2)	• 16% of hospital beds are designated as ALC and the problem has gotten worse in the last three years.	• Are we identifying people at high risk for becoming an ALC patient? • Are there frail or elderly patients in our practice whose needs have not yet been assessed by a CCAC?
4. Chronic disease management (section 5.2)	• While complications from diabetes have decreased significantly over the past few years, patients too often are getting the regular monitoring of their condition that they believe they need. • Only half of diabetes patients have their eyes and their cholesterol checked. Many have not received the medication they need. When this is recommended next, the past few years, one out of five have the classical check by experts who say needs all patients should receive medication. • The number of patients who die within one year of having a heart attack has improved slightly to one in 11, but we can still do better.	• Are we using methods, such as flow sheets, to remind us to do all the tests we should? • [illegible] • Do all of our patients know what their targets are for good disease control (e.g., BP < 130/80 for diabetes, or A1C < 7)? Have they decided their own goals for improving their health (e.g., personal targets for weight reduction)? Have they all been connected with a chronic disease self-management program? • Are we using all members of our health team to ensure that all recommended tests, education, etc. in the chronic disease management guidelines are completed? • Do we have a monofilament in the office to do proper diabetes foot exams?

Topic area	Key facts	Questions for physicians, nurses and other primary-care practitioners to ask themselves
5. Drug safety (section 4.4)	• Only 13% of Ontario doctors routinely provide patients with a list of medications taken, with 40% never providing a list. • About one in five seniors aged 65 and over are on a medication with potentially dangerous side effects.	• Can our EMRs easily generate an up-to-date list of all medication for our patients? Are we giving these updated lists regularly to our patients? • Are we encouraging patients to fill their prescription at the same pharmacy each time? • Are we considering safer alternatives for seniors who are currently taking a drug on the "Beers" list of drugs to avoid (e.g., using nortriptyline instead of amitriptyline; using other SSRIs instead of Prozac; avoiding long-acting benzodiazepines such as valium; either stopping short-acting benzodiazepines or keeping the dose to half the usual adult dose)? • Are we reviewing medications during transitions of care?
6. EHR adoption (section 8.2)	• The percentage of family doctors with EMRs rose from 26% in 2007 to 43% in 2009. We have made progress, but improvements are still needed. Ontario lags behind Australia, the UK and the Netherlands, which have 95 to 99% adoption rates. • Not all family doctors are using key features of EMRs such as flagging drug interactions or sending reminders for follow-up.	• If we are considering buying an EMR system, ask the potential vendors: - Can it give me a list of all patients with certain chronic diseases? - Can it track key indicators such as percentage of diabetes patients with A1C under control (see 4 above)? - Will it send reminders when patients need follow-up or tests? - Can it connect to pharmacies, labs, hospitals and other providers?
7. Health human resources (section 9.2)	• From 2002 to 2008, there has been an increase in the supply of family doctors and nurse practitioners. However, despite the greater need for nurse practitioners, there is still only one nurse practitioner for nearly 10 family physicians in the province, and only two of Ontario's family doctors routinely work with other health professionals in their practices. Improvements in collaboration may encourage more family doctors to create teams where family doctors work routinely with nurse practitioners.	• Are we using a team approach in our practice? If not, what are the reasons for not using it? • Could our current practice be more effective and efficient by changing how patient care is delivered, reviewing how we use each member of the team, or what roles we are covered? • What are the roles and responsibilities of the various health professionals? How are we using other professions to reduce the workload in our practice?
8. Population-based health (chapter 10)	• We saw some improvements in healthy behaviours from 2003 to 2004, but we have since lost ground from 2005 to 2006. Half of Ontarians are not getting enough exercise, one in six are smoking and one in five are heavy drinkers. • Breastfeeding rates are increasing and teen pregnancy rates are decreasing, but there is still room to improve. • One-quarter of the population does not get necessary health prevention services (e.g., pap tests, mammography and flu shots). • People with low incomes or poor education are at higher risk of unhealthy behaviours and not getting health prevention services.	• Do we advise patients about their smoking cessation at each visit? • Do we have a list of all smoking cessation supports in our community for our patients? • Do we have outreach programs for people in high-risk groups? • Do we use flow sheets to remind us of all the health prevention interventions that need to be done during periodic health exams? • If we have an EMR, does it generate reminders when people are due for their next health prevention service?

1.6 Long-term care summary

Summary for LTC leaders, staff, residents and family members.

Topic area	Key facts	Questions to ask
1. LTC wait times (sections 2.4 and 7.2)	• Despite a major increase in LTC beds several years ago, wait times have tripled since the spring of 2005 and are now at 105 days (over three months). This is contributing to the worsening ALC problem in acute care hospitals. • Only 40% of those needing LTC care got their first choice of home when placed for the first time.	• Do we have enough housing and care options in the community for people who need more services than those provided by home care but not all those provided by an LTC home? • Are there bottlenecks that delay the admission of residents to a home? How can the admission intake process be redesigned to make it more efficient? • Have we considered the cultural, ethnic and linguistic needs of our region? Have we factored this into our capacity planning?
2. Falls (section 4.5)	• One in seven residents has fallen in the last month and there has been no change in the rate of serious falls resulting in emergency department visits in recent years. There is likely room for improvement.	• Are we evaluating the cause of each fall? • Are we doing risk assessments for falls consistently? Are they up to date? Are we checking for clutter, poor lighting or other hazards? Are we avoiding physical restraints, which can cause falls? • Are we offering and encouraging the use of assistive devices (e.g., walkers), hip protectors for those at high risk and exercise programs to maintain strength and balance? • Are we avoiding drugs that make residents dizzy or confused (see 6 below)? • Do we have enough staff to assist residents in getting to washrooms, etc.? • If a resident is on a drug with side effects that might cause a fall, have we discussed a safer alternative with the doctor?
3. Pressure ulcers (section 4.5)	• Approximately one in nine residents develops a new, serious pressure ulcer each year.	• Are we doing risk scoring for ulcers consistently for all residents? • Do we provide training for all staff in protocols for prevention (e.g., early detection, turning immobile residents regularly and proper technique to avoid tearing the skin when moving a resident)? • Do we have proper padding or special mattresses for high-risk residents? • Do we have standard protocols agreed to by all doctors for treating pressure ulcers?
4. Bladder incontinence (section 3.5)	• One in six residents finds that his/her bladder control has gotten worse over the past three months.	• Are residents getting help with either exercises to strengthen bladder muscles or learning "prompted voiding" protocols that can help avoid incontinence? • Are residents getting prompt assistance when they want to go to the washroom? • Do residents know that some food items (e.g., drinks with caffeine) can worsen incontinence?

Topic area	Key facts	Questions to ask
5. Avoidable emergency department visits (section 3.7)	• Avoidable emergency department visits are common among LTC residents. There has been no change in the last six years. There is likely major room for improvement.	• What training or support do staff need to increase their skills in handling minor emergencies without needing to transfer to the emergency department? • Have we considered using nurse practitioners, telemedicine or better organized call schedules for physicians to improve the availability of people to assess minor emergencies within the home? • Are family members aware of the potential risks of emergency department visits (e.g., confusion and hospital-acquired infections)?
6. Drug safety (section 4.4)	• The use of drugs that should be avoided in the elderly (the "Beers" list) is decreasing but could be decreased further. Shortly after entering an LTC home, one in six residents receives a new antipsychotic drug that he or she was not taking before, and one in four receives a new drug for anxiety or sleep. These drugs have many risks.	• Why are so many people started on sleeping pills once they enter an LTC home? What non-drug options are being tried to reduce insomnia (e.g., avoiding caffeine, reducing noise, adopting a regular sleep routine, avoiding long naps and managing underlying depression)? • Are physicians and staff familiar with drugs to avoid in the elderly? Should some drugs be removed from the formulary? • Does a pharmacist do regular, detailed reviews of medications, with the involvement of family and staff? • Have we tried non-drug approaches for behavioural issues such as aggression (see 8 below)?
7. Restraint use (section 4.5)	• 17% of LTC residents are physically restrained. Ontario lags behind other countries with much lower rates. There is room to improve.	• Are we educating staff and family members who ask for restraints about their hazards (e.g., falls, pressure ulcers and asphyxiation)? • For people who wander, have we considered alternatives to restraints, such as bed and door alarms?
8. Behavioural issues (section 4.5)	• 11% of LTC residents' behaviours have grown worse (e.g., aggression or wandering) over the past three months.	• Are staff trained in communication and conflict de-escalation techniques to avoid making residents frustrated (e.g., good eye contact and one-sentence questions)? • Can we communicate in the various languages of our residents? • Do staff consider that behaviour may result from an existing or new health problem, discomfort or fear? When causes of disruptive behaviour can be identified, are solutions incorporated in care plans?

1.7 Cardiovascular disease summary

Cardiovascular disease

Overall, there has been a great improvement in the management of cardiovascular disease, but there are still areas where we can do better — particularly in congestive heart failure (CHF).

1. **Wait times for cardiovascular surgeries are within target for most patients, but there is still room to improve.** For coronary artery bypass, angiography and percutaneous coronary intervention, around 95% of patients have their surgery done within the recommended timeframe. There is some room to improve wait times for urgent cases for bypass (79% done within the target time) and semi-urgent percutaneous coronary interventions (65% done within the target time).

2. **More patients are on the right medications after a heart attack but, again, there is room to improve.** Use of a statin, beta-blocker and ACEI/ARB is at 86%, 79% and 80%, respectively, whereas experts suggest these rates should be closer to 90%.

3. **Heart attack incidence, mortality and readmissions are declining.** Hospitalizations for angina have also dropped by more than half over the past six years.

4. **High mortality and readmissions for CHF.** One-third of patients admitted with CHF for the first time die within the following year. This has not improved in the last six years. There were decreases in readmissions several years ago, but no improvement in the last three years. The 30-day readmission rate for CHF remains the highest of any diagnostic group, at 11%.

5. **For stroke, mortality has improved but there are opportunities to do better.** Mortality rates are declining and almost all patients are on acetylsalicylic acid or other anti-thrombotic drugs. However, only 12% of stroke patients arriving in an emergency department who could benefit from thrombolysis (clot-busting drug) get it within the recommended one-hour timeframe. Lives could be saved and disability avoided if we did a better job.

6. **Progress in reducing unhealthy behaviours (such as smoking, obesity and physical inactivity) that lead to heart disease has been stalled in the last three years.** At present, the rates of these behaviours in the population are 16%, 50% and 18%, respectively.

7. **Those with low incomes and poor education continue to be at greatest risk for both heart disease and unhealthy behaviours.** For example, smoking rates are 31% for those without a high school diploma and 13% for those with post-secondary education. Rates of physical inactivity are 58% for those in the lowest income brackets, compared to 37% for those in the highest income brackets. If we want progress in reducing these unhealthy lifestyle activities, we will need to focus on strategies that are tailored to the most vulnerable parts of our population.

Key questions for patients with heart disease to ask themselves or discuss with their healthcare provider:

- Am I on all the right medications? Ask about acetylsalicylic acid (aspirin), a cholesterol-lowering drug (e.g., a statin), ACEI/ARB and beta-blocker for past heart attacks, blocked arteries and CHF.

- Am I getting all the right monitoring? This includes blood pressure checks, periodic cholesterol tests and, for CHF patients, an echocardiogram and daily weight monitoring.

- Do I know the early signs of a stroke, so I know when to go to the hospital immediately?

- Do I know my targets for blood pressure and cholesterol? Typical blood pressure targets are 140/90 (or 130/80 for those who also have diabetes); the target for LDL ("bad cholesterol") is two or less.

- What am I doing to eliminate smoking, improve my physical activity and achieve or maintain my ideal weight? What personal goals would I like to set for myself? What help do I need — nutrition counselling, exercise groups, smoking cessation aids, support from friends or family?

1.8 Diabetes summary

Diabetes

Overall, we are cautiously optimistic that there are signs of improvement in managing diabetes, but there is still a lot of room to do better — particularly in monitoring and screening patients' conditions and risk factors and filling prescriptions. If we are to see further progress, it is also important for patients to be engaged in managing their own care and setting their own targets and plans for improving their lifestyle choices.

1. **The incidence of serious complications from diabetes has decreased in the last five years, but there is still room for improvement.** About one in 20 diabetes patients will experience a major complication (death, heart attack, stroke, amputation or kidney failure) in a year.

2. **More patients are on the right medications for diabetes, but we are still far from the best.** Only 58% regularly fill their prescriptions for a cholesterol-lowering drug (e.g., a statin), 67% for ACEI/ARB, and 46% for both. Experts suggest that nearly all diabetes patients should be on these drugs.

3. **Monitoring diabetes conditions is poor.** Only half of diabetes patients get regular eye and foot exams. All should be receiving these exams.

4. **Rates of unhealthy behaviours that lead to or worsen diabetes have either not improved or recently became worse.** Rates of obesity and physical inactivity improved from 2001 to 2005, but then deteriorated from 2005 to 2008. In 2008, half of Ontarians were physically inactive and 18% were obese.

5. **People at low income levels are less likely to receive proper diabetes monitoring.** For example, in 2008, 49% of people in the lowest income bracket had eye exams, compared to 66% among the wealthiest income levels. Those with low incomes also have a greater risk of pursuing unhealthy behaviours related to diet, exercise and smoking.

Key questions for healthcare leaders and staff to ask:

- Are we using methods such as flow sheets to remind us of all the best practices?

- If we have an EMR, does it provide us with data on the percentage of our diabetes patients who are on the right drugs (e.g., a statin and ACEI/ARB) or who have had a recent A1C or eye exam? Have we set up the EMR so that it reminds us when diabetes patients need testing or follow-up?

- Have our patients identified goals for improving their health? Have they been connected with a chronic disease self-management program?

- Do we use a monofilament in the office to do proper diabetes foot exams?

- What are we doing to reach out to the most vulnerable populations to ensure they are getting services targeted to their education level, culture or language?

Key questions for patients with diabetes to ask themselves or discuss with their healthcare provider:

- Am I on all the right medications? Ask about a statin, ACEI/ARB and acetylsalicylic acid (aspirin), in addition to medications to control blood sugar.

- Am I getting all the right monitoring? This includes eye checks, foot exams and urine tests, as well as regular blood tests for cholesterol and A1C (a three-month average of your blood sugar).

- Am I doing my own monitoring of blood sugar and blood pressure? Do I keep a log of my measurements at home?

- Have I set targets for blood sugar, blood pressure (ideally 130/80) and weight with my doctor?

- Am I eating properly and staying physically active? What personal goals do I want to set for improving my health? What support do I need to achieve my goals — nutrition counselling, exercise groups, smoking cessation aids, support from friends or family?

1.9 Cancer summary

Cancer

Overall, there have been some improvements in cancer treatment in Ontario. However, patients continue to wait too long for surgeries and systemic treatments, and more progress is needed in reducing unhealthy behaviours and improving cancer screening.

1. **Wait times for cancer care can be improved. Our greatest concern is with urgent cancer surgeries and systemic treatments (e.g., chemotherapy).** Only 53% of urgent (priority 2) patients have their surgery within the recommended timeframe. Some hospitals, including North York General Hospital, have achieved 97% through well-designed and efficient scheduling processes. Other hospitals could do the same. Wait times for radiation therapy have improved and three out of four patients are treated within the target timeframe. But there is still room to do better. Wait times for systemic treatments continue to be longer than the recommended 14-day target for both referral to consult and consult to treatment.

2. **Rates of lung cancer and mortality from breast cancer have improved over the last 10 years.** This is good news and may be due to reduced smoking in previous decades and better treatments over time.

3. **Screening rates for breast and cervical cancer are not getting better.** Approximately one-quarter of the population still does not get mammography screening or pap tests. Screening rates for colon cancer are increasing but are still too low, at 31%.

4. **Progress in reducing unhealthy behaviours, such as smoking, inadequate consumption of fruits and vegetables, obesity, physical inactivity and heavy drinking has stalled recently.** At present, the rates of these behaviours in the population are 16%, 59%, 18%, 50% and 21%, respectively. There was some improvement in these rates between 2001 and 2005, but either no progress or deteriorating trends occurred from 2005 to 2008. These unhealthy lifestyle activities have been linked to breast, colon, lung, liver, kidney and other cancers.

5. **People with low incomes and poor education levels continue to be at greatest risk for unhealthy behaviours and for not receiving preventive screening.** For example, smoking rates are 31% for those without a high school diploma and 13% for those with post-secondary education. Rates for mammography screening are 64% among low-income women, compared to 75% for those with higher incomes. Future plans to battle cancer need to consider strategies that target the most vulnerable in our population.

Key questions for healthcare leaders and staff to ask:

- What targets are we setting for wait times? If some places have achieved major improvements (e.g., North York General Hospital), why can we not do the same thing?

- Have we mapped out the processes involved in arranging cancer surgery, radiation or chemotherapy? Where are the areas of waste, duplication, error or missed hand-offs? What are we doing to make our processes more timely and reliable?

- Do we have information systems to ensure that everyone due for cancer screening is reminded?

- What are we doing to reach out to the most vulnerable populations?

Key questions for people to ask themselves or discuss with their healthcare provider:

- Which screening tests do I need for my age and gender and how often? When am I due for each of these?

- What am I doing to eliminate smoking, become more physically active and achieve or maintain my ideal weight? What personal goals would I like to set for myself? What help do I need — nutrition counselling, exercise groups, smoking cessation aids, support from friends or family?

1.10   Mental health summary

Mental health

Mental health   an area where Ontario has major gaps in being able to measure the quality of healthcare services. In this report we summarize what is known with existing data and call for more investment to measure how well people are accessing the services they need and whether their symptoms or daily functioning have improved after receiving care.

1. **Depression is a significant problem among frail or elderly individuals.** Nine percent of those in home care show serious signs of anxiety or depression, such as profound sadness or withdrawal from normal activities. Currently 22% of those living in LTC and 17% of those in complex continuing care (CCC) showed increasing symptoms of depression or anxiety in the preceding three months.

2. **Inappropriate behaviour, such as aggression, agitation or wandering, is common among LTC residents.** About one in nine residents exhibited worsening behaviour over the past three months. These behaviours are particularly common among those with Alzheimer's or other dementias. Although there are no benchmarks for this indicator, there are many opportunities to improve.

3. **Drug management for people in LTC homes and CCC continues to be of concern.** Among elderly LTC residents, 17% have an anti-psychotic medication prescribed with no clear reason and 30% have an anti-anxiety or hypnotic drug (sleeping pill) prescribed without having a clear diagnosis. Shortly after entering an LTC home, one in six residents receives an anti-psychotic drug and one in four receives a drug for anxiety or sleep that he/she was not receiving before. Almost one-quarter of CCC patients are on an anti-psychotic medication for no clear reason. These drugs have potentially serious side effects and should be avoided where possible. There has been little to no improvement in all of these indicators.

4. **The rate of intentional self-harm has dropped in recent years, but there is still room for improvement.** At present, there are 89 emergency department visits per 100,000 for intentional self-harm. We note that women in lower income brackets appear to be at greatest risk. Suicide rates in Canada have remained constant from 2001 to 2005, at 12 per 100,000. Unfortunately, up-to-date data for this critical indicator is not available in Ontario.

Key questions for healthcare leaders and staff to ask:

- Are we over-prescribing anti-psychotic and anti-anxiety drugs? Are we using non-drug methods to deal with agitation, insomnia or anxiety? Are we offering people in home care or LTC social activities or counselling? To avoid frustration among LTC residents, are we using strategies such as one-sentence communication, maintaining good eye contact and conflict de-escalation techniques?

- Are we ensuring regular medication reviews by a pharmacist, with input from the client/resident, the family and staff?

- If we have an EMR, does it monitor drug utilizations patterns?

- Do we screen for warning signs of depression?

- What are we doing to reach out to the most vulnerable populations to ensure they are getting the counselling they need to reduce the incidence of self-harm? Are we making sure the services we provide take into account people's culture, financial and family situation?

Key questions for family members of patients experiencing symptoms of mental illness to ask themselves, or discuss with their healthcare provider:

- Is my family member showing signs of depression? What is being done to treat these symptoms? If my family member is in LTC, is there anything in the surroundings that could be contributing? What could be done to improve participation in activities or social networks?

- Is my family member being given anti-psychotic or anti-anxiety/hypnotic drugs or sleeping pills (such as valium or ativan)? Have I discussed with his or her doctor if these medications are necessary and if there are alternative methods to deal with agitation, sleeplessness or anxiety?

Glossary of terms

Acronyms used in data source listings

CFS (2008)	Commonwealth Fund International Survey of Sicker Adults, 2008
CFS (2009)	Commonwealth Fund International Survey of Physician Practices, 2009
CIHI	Canadian Institute for Health Information
CCHS	Canadian Community Health Survey
CCRS	Continuing Care Reporting System
CTAS	Canadian Triage and Acuity Scale
DAD	Discharge Abstract Database
ICES	Institute for Clinical Evaluative Sciences
MOHLTC	Ministry of Health and Long-Term Care
MOTCU	Ministry of Training, Colleges and Universities
NACRS	National Ambulatory Care Reporting System Database
ODBD	Ontario Drug Benefits Database
ODD	Ontario Diabetes Database
OHIP	Ontario Health Insurance Plan
RAI-HC	Resident Assessment Instrument — Home Care
RAI-MDS	Resident Assessment Instrument — Minimum Data Set
RPD	Registered Persons Database

Other acronyms used in the report

ACEI	angiotensin-converting enzyme inhibitor
AHRQ	Agency for Healthcare Research and Quality
ALC	alternate level of care
AMI	acute myocardial infarction
ARB	angiotensin-receptor blocker
ASA	acetylsalicylic acid
CCAC	community care access centre
CCC	complex continuing care
CHC	community health centre

CHF	congestive heart failure
CIRT	Colonoscopy Interim Reporting Tool
COPD	chronic obstructive pulmonary disorder
CPNP	Canada Prenatal Nutrition Program
CTAS	Canadian Triage and Acuity Scale
DI/PACS	diagnostic imaging/picture archiving and communications system
DPV	Drug Profile Viewer
DVT	deep vein thrombosis
ED	emergency department (in LHIN tables)
ED-PIP	ED Process Improvement Program
EHR	electronic health record
EMR	electronic medical record
EMRAM	Electronic Medical Record Adoption ModelSM
FHT	family health team
FOBT	fecal occult blood test
GDP	gross domestic product
ICU	intensive care unit
HPV	human papillomavirus
HSMR	hospital standardized mortality ratio
IT	information technology
LHIN	local health integration network
LTC	long-term care
MRSA	Methicillin-resistant Staphylococcus aureus
OECD	Organisation for Economic Co-operation and Development
PACS	picture archiving and communications systems
RFID	radio frequency identification
UTI	urinary tract infection
VRE	Vancomycin-resistant Enterococci
WSIB	Workplace Safety and Insurance Board

2.1 Wait times in emergency departments

Emergency departments are often people's first contact with the health system when they need care right away. Visitors to the emergency department expect to have their problem dealt with quickly and efficiently. We look at wait times in the emergency department several different ways: the wait time to see the emergency department doctor; the total amount of time spent in the emergency department; and the amount of time unnecessarily spent waiting in the emergency department for a hospital bed after the decision to admit has been made. In general, there are different standards for these wait times, depending on how sick a patient is.[1] The more severe the case, the more quickly the patient must be seen by a doctor, and the longer the patient typically must stay in the emergency department for treatment.

What we want	Consequences if we don't get it	Whom does this matter to?
Short wait times and efficient care processes in the emergency department.	Long waits in the emergency department are inconvenient for patients. In some cases, a delay in providing care in the emergency department could be bad for one's health. Long waits in stretchers or hallways, for those awaiting admission to hospital, can compromise comfort and privacy. Lastly, sometimes if an emergency department is completely full because of long wait times, ambulances might need to be diverted to other emergency departments, which can put patients at risk of harm.[2]	The 20% of the Ontario population that visits an emergency department at least once a year[3]; last year, they accounted for 5.4 million emergency department visits.[4]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of emergency department patient care completed within recommended timeframe: • Overall • Resuscitation and emergent patients (target eight hours) • Urgent (target six hours) • Semi-urgent and non-urgent (target four hours)	78%* 73%† 75% 83%††		About one-quarter of people spend more time in the emergency department than is desirable. This has not improved significantly in the last year. In 2007, Ontario and Canada had the worst emergency department wait times compared to several other countries.[5] The government has set up programs to help hospitals with the longest wait times increase the proportion of patients who are seen within the target timeframe by 15% over two years.[6] We will monitor progress in future reports.
Percentage of patients who left without being seen	5.7%**		Six out of every 100 Ontarians who visit the emergency department leave without being seen by a physician, likely because they were tired of waiting.[7] This problem has worsened over the past five years. There is room to improve.
Median time to MD assessment by Canadian Triage and Acuity Scale (CTAS) level: • Overall • Emergent • Urgent • Semi-urgent • Non-urgent	1.2 h** 0.9 h 1.4 h 1.2 h 0.9 h		People are waiting too long to see a doctor in the emergency department, and this problem has gotten worse in the past five years. For example, national guidelines say that almost all urgent patients should be seen within half an hour, yet half of these patients are waiting 1.4 hours or more.[8] There is huge room to improve.
Median time from admission to transfer to bed: • Overall • Emergent • Urgent • Semi-urgent • Non-urgent	3.4 h** 4.0 h 3.4 h 2.3 h 1.4 h		Half of Ontarians waited more than three hours for a bed after being admitted to the hospital from the emergency department. This wait time has increased over the past year. There is a lot of room to improve.

Data sources:
* Emergency Department Reporting System, April to June 2009, provided by Cancer Care Ontario. ** NACRS, FY 2008/09, provided by MOHLTC.
† This includes those who are CTAS levels 1 and 2. †† This includes CTAS levels 4 and 5.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Backlogs elsewhere in the hospital prevent patients admitted in the emergency department from being sent to a hospital bed.

Inefficient processes within the emergency department, such as staffing shift change hand-offs, sending patients for diagnostic tests and receiving test results or admitting patients to in-patient care, can slow processes within the emergency department.

Inappropriate demand on the emergency department occurs when patients who have low acuity conditions go to emergency departments for care.

Ideas for Improvement

Develop better care coordination and move patients who no longer need in-hospital care to the right place as soon as possible (e.g., home, home care, long-term care):

- Provide alternatives for alternate level of care (ALC) patients (see section 7.2).

- Use utilization management software to help decide when it's safe to send a patient home.[ ]

- Start discharge planning early and make sure home care assessments are not delayed.

- Use bed tracking systems to reduce the time between a patient leaving a bed and when a new patient can use it.[10]

Spread elective surgery cases more evenly throughout the week.[11] For example, if Mondays have more elective surgeries booked than Thursdays do, then on Mondays there is little extra capacity to handle surgical cases from the emergency department, and that creates further delays in the rest of the emergency department. Scheduling evenly helps avoid this problem.

Make specific process improvements within the emergency department, such as

- Create a fast-track area for less serious cases.

- Create special units for patients who need to be under observation for several hours.

- Provide chairs, instead of a room, for people who only temporarily need a stretcher (e.g., during the doctor's physical exam).

- Design the emergency department to minimize wasted staff time walking back and forth.

- Use flexible staff scheduling — work with staff to create arrangements where staff can be brought in for a sudden surge in visits or stay at home when it's quiet.[ ]

See also the "Emergency department wait times at Credit Valley Hospital" success story (section 12).

Information systems. Some places are experimenting with radio frequency identification (RFID) and Wi-Fi location monitoring technologies to track where doctors, nurses and patients are at any moment and indicate when it's time for action (e.g., when a lab result is back and the patient is ready to be reassessed).[ ]

Divert more non-urgent cases away from the emergency department to other alternatives. Work with primary care doctors to ensure good access to after-hours care.[ ] Encourage people to call Telehealth Ontario for advice on whether an emergency department visit is needed. The "Readmissions at North York General Hospital" success story describes a program that diverts mental health patients from the emergency department to more appropriate, community-based care services.

Improve primary care services. Improve access to primary care (see section 2.2) and management of chronic diseases (see section 3.2) so patients are less likely to require emergency care.

What is Ontario doing?

Ministry-funded initiatives include the following:[ ]

- The 2009 ED Process Improvement Program (ED-PIP) aims to decrease length of stay and improve patient satisfaction. Coaches work with hospital staff to build their capacity to implement process changes.

- A new public reporting website for emergency department wait times was launched in February 2009.

- The Ambulance Offload Program (2008) funds extra nurses in certain emergency departments so that ambulance staff do not have to wait long periods before a nurse is available to accept the patient.

- Nurse-led outreach teams (2008) aim to help long-term care (LTC) homes avoid emergency department transfers. Nurse practitioners assigned to LTC homes provide staff mentorship and on-site care.

- The ED Pay-For-Results Program provides incentives to designated hospitals with high emergency department volumes and long wait times to reduce length of stay, particularly for higher-acuity patients. This program was expanded in 2009 to include hospitals in all local health integration networks (LHINs).

2.2 Access to primary care

All Ontarians should have a regular family doctor — preferably one who works in a team with nurses and other healthcare providers. The primary care team knows the person's medical history, diagnoses and treats new problems, monitors chronic conditions, offers preventive health services and coordinates referrals to specialists when needed. It's important to make sure that when people need a particular service from their family doctor, they don't have to wait too long.

What we want	Consequences if we don't get it	Whom does this matter to?
Everyone has a regular family doctor. No long waits to see the family doctor when needed.	Patients might not get regular preventive care when needed, may need to seek care from an emergency department or another doctor who doesn't know the patient's health history, or may wait and get sicker. Any of these can be bad for patients' health and waste their time.	All 13 million Ontarians.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of adults who are without a regular doctor	7.1%*		There are more than 730,000 adult Ontarians without a regular doctor;[16] over half of them are actively looking for a regular doctor, but can't find one. This has not improved in the last three years, despite increases in the supply of doctors[17] and more family health teams (FHTs).[18]
Percentage of adults who are without a regular doctor and actively seeking one	3.9%*		
Percentage of adults who were able to see their doctor on the same or next day the last time they were sick or needed medical attention	49%*		Only half of Ontarians can see their doctor on the same or next day when sick. This has not improved in the last two years. Compared to 10 other countries surveyed, Canada and Ontario have the worst record on timely access to primary care.
Percentage of physicians who say most or all of their patients can see them the same or next day	47%**		
Percentage of adults who thought they waited too long to see their doctor for an appointment	89%*		Almost nine out of every 10 Ontarians feel they are waiting too long to see their doctor; this has gotten worse in the last three years.

Root Cause of Quality Problems

Inconvenient or inefficient patient scheduling. When wait times are long, office staff waste a lot of time triaging patients by urgency.

Unnecessary work is done in primary care offices, such as asking patients to come to the clinic to get routine prescriptions or test results.

Inefficient or inconsistent processes exist, such as wasting time searching for information and supplies, and waiting for one step to finish before another one starts.

There is a lack of teamwork and inefficient use of staff time. Doctors may be performing tasks or procedures that could be performed by another healthcare professional. Better teamwork could increase the number of patients in a doctor's practice and improve the availability of appointments.

Ideas for Improvement

Advanced access scheduling. This method of scheduling patient appointments aims to reduce wait times to see a primary care doctor. Following basic principles of queue management in the family practice office can bring wait times for appointments close to zero:

- Carefully track incoming requests and actual slots available.
- Aim to match supply with demand for visits.
- Make available more slots for when people come with urgent problems (e.g., if Mondays are busiest, schedule more slots then and put optional meetings on slower days).
- Work down the backlog.
- Reshape the demand. Handle minor issues over the phone (e.g., prescription renewals for certain but not all medications). Eliminate unnecessary follow-up visits.

For more information, see the OHQC guide to access:
http://www.ohqc.ca/pdfs/access.pdf

Improve office efficiency. Simple steps that save minutes or seconds of each clinic visit can add up to days or weeks of saved time over a year:

- Set up every patient room in the same manner.
- Organize patient records more effectively (see below).
- Use flow sheets.

Have a well-functioning electronic health record (EHR) system. While the main benefit of EHRs is to improve quality by giving reminders of when to use tests, take drugs or schedule visits, they can also save time by making it easier to access test results or other information in real time. The EHR can also be set up to monitor statistics on wait times or office efficiency.

Use other team members to the fullest. Primary care clinics can be set up as teams with other healthcare professionals available to support doctors.[19,20] Clarify roles and responsibilities for each team member — for example:

- Nurses or nurse practitioners can do preventive health counselling, pap tests and immunizations, or give lab results over the phone.[21]
- Office staff can do simple things, such as checking height and weight, checking blood pressure with an automatic cuff or ensuring that data is properly input into flow sheets.

What is Ontario doing?

- Since 2005, Ontario has introduced 150 family health teams (FHTs), family health networks, family health groups, primary health organizations and nurse practitioner-led clinics. To help improve access, these models are required to provide extended office hours for scheduled and unscheduled patients.[22]
- The Quality Improvement and Innovation Partnership has helped more than 120 FHTs and community health centres (CHCs) implement advanced access and office redesign.[23]
- In 2005, Ontario expanded its CHC program by investing in 22 new and 17 satellite centres,[24] which will bring the number of CHCs to 103.[25]
- In February 2009, Ontario launched Health Care Connect, a program that helps Ontarians without a family healthcare provider find one. Any Ontarian can register and a care connector will search for someone who is accepting new patients nearby.[26]

2.3 Surgical wait times and access to specialists

Wait times for specialized surgery and high-tech imaging (CT and MRI scans) have made headlines for a decade. In 2003, the provinces and federal government made a joint commitment to reduce wait times and in 2004, Ontario launched its Wait Times Strategy, which increased the number of surgeries performed, set targets for wait times (see table below) and created an information system to track wait times and report them to the public. This year, we look again at how well we are doing in reducing wait times in these areas, and share new information on wait times for radiation and chemotherapy for cancer.

Procedures	Priority 1* (immediate)	Priority 2* (high urgency)	Priority 3* (medium urgency)	Priority 4* (low urgency)
Cataract surgery	Immediate	6 weeks	12 weeks	26 weeks
Hip and knee replacements	Immediate	6 weeks	12 weeks	26 weeks
Cancer surgery	Immediate	2 weeks	4 weeks	12 weeks
MRI/CT scan	Immediate	48 hours	2 to 10 days	4 weeks
General surgery	Immediate	28 days	84 days	182 days
Cardiac procedures (angiography, percutaneous coronary intervention† and coronary artery bypass graft)	Wait time targets are specific to each patient.			

Data sources:
* MOHLTC, Ontario Wait Times Strategy and Cardiac Care Network, 2004. Note: The wait for surgery is defined as starting the day the surgeon decides to operate and the patient agrees, and ending the day the surgery is performed. Target wait times vary depending on the priority score, indicating the seriousness of the conditions, as assigned by the main physician.
† Also known as balloon angioplasty, where a catheter with a balloon is threaded into the artery of the heart to open blockages.

What we want	Consequences if we don't get it	Whom does this matter to?
No unreasonable wait for hip and knee replacements.	Patients will spend more days in pain and suffering. They may become unable to do activities and exercise, which may lead to the development of chronic diseases, such as diabetes, hypertension and depression.	The 30,000 people who get hip or knee replacements per year.
No unreasonable wait for cataract surgery.	People will suffer longer from poor vision and experience more falls.[27]	The 140,000 people who get cataract surgeries per year.
No unreasonable wait for cardiac procedures (coronary artery bypass graft, percutaneous coronary intervention or angiography).	Evidence has shown that people die if they wait too long for coronary interventions.[28]	The Ontarians who get the 8,300 coronary artery bypass grafts, 17,000 percutaneous coronary interventions and 52,000 angiographies each year.
No unreasonable wait for cancer treatments — surgery, radiation or systemic therapy (chemotherapy).	Very long wait times could lead to lower cancer survival;[29] however, shorter wait times that do not statistically affect survival are still undesirable because they are highly stressful for the patient.	The more than 62,000 people who will be diagnosed with cancer this year — and their families.[30]
No unreasonable wait for CT or MRI scans.	Cancer surgery could be delayed if a CT or MRI scan to find the cancer is not done promptly. The result may be inconvenience or unnecessary anxiety waiting for a diagnosis.	Those who got the 1.6 million CT and 500,000 MRI scans performed last year.[31]
No unreasonable wait to see a specialist.	Patients may experience unnecessary anxiety waiting for someone to diagnosis a worrisome symptom, or unnecessary suffering waiting for treatment of a problem.	For every 10 people with a family doctor, there are about six specialist referrals per year.[32]
Use of telemedicine for specialist care to avoid travel for people in remote areas.	Patients who have to travel have more inconvenience, wasted time and lost earnings. Government must pay greater travel subsidies.	Ontarians living in rural communities (especially those in northern Ontario).

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Indicators — cancer wait times	Value	Time trends	Bottom line
Percentage of cancer surgeries done within target: — Priority 2 — Priority 3 — Priority 4	53%* 68% 90%		Wait times for cancer surgery have remained the same over the last two years. Only half of cancer patients who need surgery urgently (within two weeks) are getting it done within target; that's not good enough.
Percentage of patients where radiation therapy started within target (from being ready to treat to getting treatment)	75%**		About four in five patients are treated within the targeted time. Wait times have improved in the last few months.
Systemic treatment (chemotherapy) — percentage completed within target: — Referral to consult — Consult to treatment	48%** 41%		Less than half of patients needing systemic treatments are seen by a specialist within the 14-day target. After being seen by the specialist, fewer than half get treatment within 14 days. This has not improved in recent months.
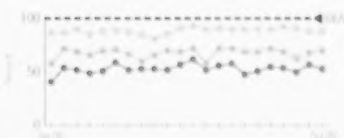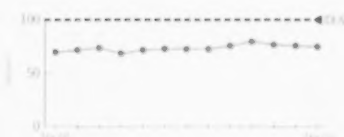
Data sources: *Cancer Care Ontario; data values represent the average of January to October 2009. **Cancer Care Ontario; data values represent the average of April to November 2009.

Indicators — imaging wait times	Value	Time trends	Bottom line
Percentage of CT scans done within target: — Priority 2 — Priority 3 — Priority 4	88%*** 54% 69%		CT and MRI wait times have improved for high-priority patients in the last 20 months; 88% and 70%, respectively, are now done on time within target. While that is encouraging, wait times have gotten worse for patients at lower priorities.
Percentage of MRI scans done within target: — Priority 2 — Priority 3 — Priority 4	71%*** 41% 30%		Wait times for MRI scans have more than doubled in the last six years, and wait times for CT scans have increased by 65%. For patients averaged across all priority levels, CT and MRI wait times have not improved, and only one in three MRI scans is done within target.

Data sources:
*** Cancer Care Ontario and Wait Times Information Systems; data values represent the average of January to October 2009

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Indicators — cardiac wait times	Value	Time trends	Bottom line
Percentage of coronary artery bypass grafts done within target:			Eight out of 10 urgent and nine out of 10 semi-urgent coronary artery bypass graft patients have their procedure completed within the recommended timeframe. There has been no improvement over the past year.
— Urgent	79%*		
— Semi-urgent	87%		
— Elective	94%		
Percentage of angiographies done within target:			Approximately nine in 10 urgent and almost all elective angiography patients have their procedure completed within the recommended timeframe. There has been a decline in the number of semi-urgent cases completed within the recommended wait time. There is room to improve.
— Urgent	87%*		
— Semi-urgent	65%		
— Elective	98%		
Percentage of percutaneous coronary intervention done within target:			More than nine in 10 urgent and elective percutaneous coronary intervention procedures are completed within the recommended timeframe. There is room to improve for semi-urgent cases.
— Urgent	91%*		
— Semi-urgent	81%		
— Elective	96%		

Data sources: *Cardiac Care Network; data values represent the average of January to November 2009. Note: Some patients move between urgency categories.

Other Indicators	Value	Time trends	Bottom line
Percentage of cases done within target:			Nine in 10 patients with low or medium urgency surgeries get served within the target time. Wait times are generally stable. Patients at high priority have more difficulty getting their surgery on time; they account for only 6% of cases, but their needs are the most pressing.
General surgery			
— Priority 2	75%**		
— Priority 3	91%		
— Priority 4	95%		
Cataract surgery			Almost all low urgency cataract surgeries and 85% of medium urgency cataract surgeries are now done within the target time. These cases account for 97% of cataract surgeries done.
— Priority 2	78%**		
— Priority 3	87%		
— Priority 4	98%		
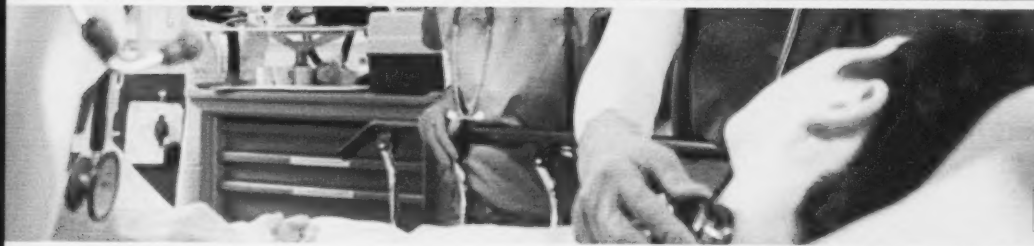
Data sources:
** Cancer Care Ontario and Wait Times Information System; data values represent the average of January to October 2009.

Other Indicators	Value	Time trends	Bottom line
Hip replacement — Priority 2 — Priority 3 — Priority 4	63%** 69% 90%		Wait times for hip and knee replacements have gradually improved over the last two years. There's still some room for improvement, as one in four patients are not served within target. The high priority patients continue to have greater difficulty getting their surgery done in the recommended timeframe.
Knee replacement — Priority 2 — Priority 3 — Priority 4	62%** 64% 87%		
Rate of telemedicine use for clinical patient consultations per 100,000 population	416***		Over the last five years, there has been a large increase in telemedicine use for clinical consultations in Ontario.
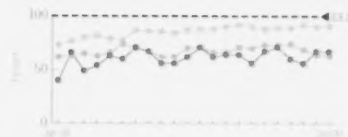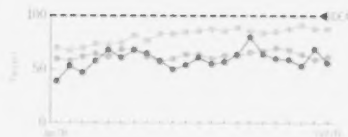
Data sources:
** Cancer Care Ontario and Wait Times Information Systems; data values represent the average of January to October 2009.
*** Ontario Telemedicine Network; data value represents 2008/09; rate calculated with Statistics Canada Population Files.

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The rates of use of these different procedures do not measure quality of care, but do provide interesting background information to help interpret the quality indicators above. Key findings are as follows:

Utilization measures	Values	Time trends	Bottom line
Scans per 100,000 adults**: CT MRI	13,000* 4,100		**MRI scans have more then doubled in the last six years and CT scans have increased by 65%. Yet wait times have not improved at all in that time period.**
Surgeries per 100,000 adults**: hip replacements knee replacements	104* 201		**The use of hip and knee replacements and cataract surgery increased rapidly from 2003/04 to 2006/07 but has since levelled off in the last three years. Even with the stabilization of the rate of procedures being done, wait times have been either steady or decreased slightly. This suggests that the demand and supply of services are close to being in balance – which is good.**
Cataracts per 100,000 adults**:	1,418*		
Cardiac procedures per 100,000 adults**: angiography percutaneous coronary intervention coronary artery bypass graft	531* 176 85		**Use of cardiac bypass has been gradually decreasing. Use of PCI and angiography increased up until 2005/06 and have since decreased modestly**

* Data source: DAD, StatsCan population files; RPD; calculated by ICES. Most recent results are for fiscal year 2008/09.
** rates are per 100,000 adults, aged 20 and over.

Root Cause of Quality Problems

People are getting services they don't need, which adds to the length of the queue.

People get stuck in the queue. Wait times for certain services can be long.

There are problems with hand-offs in services that need to take place to get ready for surgery.

There are problems accessing other services also needed for surgery.

Ideas for Improvement

Implement appropriateness criteria. Patients may have been placed on the wait list who don't truly need surgery or a test. Some studies have raised concerns that many people who get cataract surgeries didn't get improved vision, because they didn't need the surgery in the first place.[33] Other studies raise concerns about the dangers of overuse of CT scans, which emit 100 times the radiation of standard X-rays.[34] There are some objective criteria for determining urgency for certain procedures (e.g., hip or knee replacement[35],[36] and cataract surgery[37],[38]) but there is no requirement to use these at this time. Appropriateness criteria are currently being developed for CT and MRI use in Ontario.[39]

Implement aspects of queue management:
Balance supply and demand.[40] Good queue management includes careful monitoring of incoming demand, projections of future demand and careful planning of the number of procedures needed now and in future years to meet the demand.[41] We are not aware of specific planning targets for volumes in future years that account for these factors. It is important that clear expectations are given to hospitals about the volume of services they provide in order to meet these planning targets, and that their funding formula takes those expectations into account.
Work down the backlog.[42] This is another principle of good queue management. Even if the supply of spots is increased to meet the demand for procedures, there still may be many people waiting in the queue, which will keep wait times high indefinitely. The solution is to temporarily increase the rate of procedures done until this backlog is eliminated, and then return to the previous rate of procedures being done.

Improve process flow. Problems with surgical wait times appear greatest for high priority cases. We do not believe this is an issue with not having enough resources, because everyone eventually is getting their surgery. Rather, it is a problem with coordination of services — making sure all the necessary services are lined up in order (the booking for surgery, arrangement of pre-operative tests and consultations).

Ensure at least some excess capacity for other services that need to happen at the same time as surgery. Complex surgeries may require the patient to stay in the intensive care unit (ICU) afterwards. If the ICU is running at close to 100% capacity, however, then there is a high chance the surgery will be delayed. Queue management principles suggest that to accommodate random surges in demand, at least some slack capacity is needed to keep wait times low.[43] Such situations also create competition between different procedures vying for the same ICU bed. ICU bed capacity challenges may or may not be due to a lack of ICU beds; it's important to make sure ICU beds are used appropriately. ICU patients might stay longer than they need to if there is no regular bed to transfer to. That, in turn, may be related to the backlog of ALC patients waiting to be transferred out of hospital.

What is Ontario doing?

- Peri-operative improvement expert coaching teams are assisting hospitals to run their operating rooms more efficiently.[44]

- MOHLTC and the University Health Network, in partnership with St. Joseph's Healthcare Hamilton, have launched an online MRI and CT decision support tool to help physicians determine the appropriateness of testing and eliminate unnecessary tests, thereby reducing wait times.[45]

- The Wait Times Information System collects information on wait times at 82 of Ontario's hospitals. The public reporting system helps clinicians and administrators monitor and manage their wait times and helps the public assess Ontario's progress.[46]

- Performance targets for improving wait times have been embedded in accountability agreements between the Ministry and Local Health Integration Networks (LHINs),[47] and between LHINs and hospitals.[48]

2.4 Access to long-term care

People who have difficulty caring for themselves may rely on home care to live independently. In Ontario, community care access centres (CCACs) arrange services such as nursing, personal support, physiotherapy, occupational therapy, speech-language therapy, social work, nutritional counselling, medical supplies and equipment. CCACs also arrange placements to LTC homes for those who can't cope at home even with home care. It is important to make sure they get into an LTC home as soon as possible, once it is determined that they need to be there. Otherwise, they may not get the care they need and if their condition worsens they may place undue burden on those caring for them at home.

What we want	Consequences if we don't get it	Whom does this matter to?
Short wait times to get into an LTC home.	If the person is waiting at home, that could place a heavy burden on loved ones who are caring for the individual. If the person is waiting in hospital, then the hospital bed is used unnecessarily, which can lead to emergency department overcrowding and wasted resources.	The 21,500 seniors in Ontario who are on the wait list for placement into an LTC home each year, along with their families and caregivers.[49]
To do our best to allow people to get their first choice of LTC home.[50]	Being placed in a second or third choice home may mean being placed further away from loved ones or in a home that does not specialize in meeting one's ethnic, cultural or medical needs. Residents can move to a higher-ranked choice later, but that can be inconvenient and disruptive to the residents' continuity of care.	

Indicator	Value	Time trends & comparisons	Bottom line
Median number of days to LTC home placement —●— Overall —●— Those placed from hospital —●— Those placed from home	105 days 53 days 173 days		**Wait times to get into an LTC home are too long, and have tripled since spring of 2005. For those placed from home, the wait time is over five months. This has occurred, despite a major expansion of LTC beds which took place earlier in the decade.[51] We can do better. Some places rely on alternatives such as assisted living homes for those needing a lighter level of care.[52]**
Percentage of residents placed into LTC who got their first choice of home the first time around	39%		**Only 40% of people waiting for LTC placement got their first choice when placed for the first time. There has been no improvement over the last three years.**
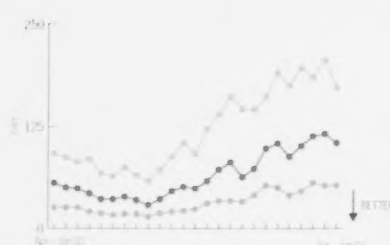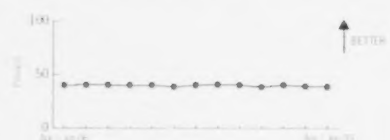
HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Issue: Long wait times for LTC and home care

There are not enough places for those who need ongoing care. LTC homes may be full or there may not be enough capacity for home care to take on another client.

People needing LTC may be labelled prematurely.

People placed on wait lists may not need LTC. Some people may be placed on wait lists with the rationale that, by the time their name comes up, they will need LTC.

Issue: People do not get their first choice for LTC

There are not enough homes serving specific populations.

The community lacks enough LTC capacity. Some people may wish to stay in a community where their family resides or where they have support, but there may be little capacity for LTC.

Ideas for Improvement

Ensure there are sufficient alternatives to LTC homes. This includes assisted living homes or supportive housing,[53] where frail individuals can access some degree of ongoing care if their needs are less than what an LTC home would provide. In last year's report, we described how the region around Lethbridge, Alberta, uses this strategy to keep its wait list at only 29 days and uses one-third fewer LTC beds compared to Ontario.[54] Retirement homes provide some of these services in Ontario now but are available only for those who can afford them. Although rent subsidies are available to eligible seniors, the criteria are stringent and wait lists for subsidized units can be long.[55] Furthermore, although these homes may be accredited by the Ontario Retirement Communities Association,[56] they do not fall under the jurisdiction of MOHLTC.

Consider increases in home care availability. In the past, there have been caps on hours of care for home care clients; these have been recently lifted.[57] This change may allow some clients to avoid being put on wait lists for LTC. However, for people with heavier needs, other options such as assisted living (see above) may be more cost-effective than home care.

Avoid early labelling of people as needing LTC. When people go to hospital with a sudden worsening of their condition, they may be told they need to go to LTC before they have had a chance to recover. Once that happens, they may sell the house and set off a chain of irreversible events. Then, if the patient recovers better than expected, they will still need to go to LTC.

Use objective criteria to help determine who truly needs LTC. This means careful screening of individuals' healthcare needs to ensure that only those with heavy needs actually get on the wait list. This may help address situations where people who fear long waits get themselves on the list "just in case." Objective tools (e.g., the MAPLe score [58]) can help care planners decide whether an individual's needs are heavy enough that they should be put on the list.

Consider planning for more capacity, or shifting existing LTC bed capacity, to serve ethnic or linguistic groups or communities that have particularly long wait lists. With more options available, individuals might have a better chance of getting their first choice.

Establish regional plans for LTC. Residents should not have to move far outside their communities to receive LTC.

What is Ontario doing?

- In August 2007, Ontario launched its Aging at Home Initiative. The initiative invested more than $700 million through Ontario's 14 LHINs to fund a series of pilot projects and programs.[59]
- The Home First program in the Mississauga Halton LHIN aims to return patients admitted to hospital from home back to their home, with home care support as needed. The process of LTC placement, if needed, is made from home instead of hospital.[60]

3.1 Use of right treatments in hospital

Heart attacks, strokes and heart failure are common reasons why people are admitted to hospital. It is important that they get certain drugs that can save lives, prevent future complications of their illness and preserve their health.

If you are in hospital for this reason	You should get these treatments	Consequences if we don't get it	Whom does this matter to?
Heart attack (acute myocardial infarction — AMI)	A beta-blocker,[61] a statin to lower cholesterol[62] and an angiotensin-converting enzyme inhibitor (ACEI) or angiotensin-receptor blocker (ARB).[63]	More strokes, repeat heart attacks and death.	20,000 people hospitalized for heart attacks each year.[64]
Congestive heart failure (CHF)	An ACEI/ARB[65] and a beta-blocker.[66]	More deaths and hospitalizations and worse quality of life.	15,000 elderly people hospitalized for CHF each year.[67]
Stroke	Acetylsalicylic acid (ASA, or aspirin) or anti-thrombotic drug (blood thinner).[68]	More repeat strokes.	16,000 people experiencing a new ischemic stroke each year.[69]
	A clot-busting drug for those who can get to a major hospital right away after symptoms start.[70]	More disability (e.g., loss of use of arm or leg, or speech) and death.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of elderly patients with AMI who, within 90 days of discharge, filled a prescription for the recommended drugs: —•— Statin —•— Beta-blocker —•— ACEI/ARB —•— All three at once	 86%* 79% 80% 60%		The use of statins after a heart attack has improved steadily to 86%, but there has been no recent improvement in the use of beta-blockers or ACEI/ARBs. Guidelines suggest we may be able to increase the use of these drugs to 90%.[71]
Percentage of elderly patients with CHF who, within 90 days of discharge, filled a prescription for the recommended drugs: —•— ACEI/ARB —•— Beta-blocker —•— Both at once	 74%* 65% 51%		Use of recommended drugs for CHF patients after they have been discharged has increased over the past six years, which is encouraging. Current guidelines suggest most patients probably should be on these drugs, and there may be opportunities to increase this rate further.[72]
Percentage of acute stroke patients discharged on ASA or anti-thrombotic therapy	92%**		Nine in 10 stroke patients are getting a recommended blood-thinning drug when they are discharged home. There has been some improvement over the last six years.
Percentage of ischemic stroke patients eligible for thrombolysis (clot-busting drug) who get it within one hour of arriving in the emergency department	12%**†		Only one in eight patients who have had a stroke and could benefit from clot-busting drugs is quickly getting them. There has been some improvement over the last five years, but we can do much better.

Data sources:
* RPD, DAD, ODBD, FY 2008/09; calculated by ICES. These indicators are calculated only for patients aged 66 years and older, as data on drug use was only available for this group. The indicator tracks prescriptions filled. Some might fill the prescription but not actually take the drug; hence, rate of actual use may be lower.
** Registry of the Canadian Stroke Network, Q4 FY 2008/09; calculated by ICES. This indicator looks at ischemic stroke/transient ischemic stroke patients discharged alive from the emergency department or acute in-patient setting of a regional stroke centre (note that this analysis does not include hemorrhagic stroke).
† This indicator looks at ischemic stroke patients who arrive at the emergency department of a regional stroke centre within 2.5 hours of stroke symptom onset.

Root Cause of Quality Problems

Issue: For drug management

Physicians forget to order the right drugs or treatments, because they are busy, distracted by other patient issues or there are too many things to remember. Or, there may be a good reason to initially delay giving the drug (e.g., beta-blockers in heart attack), but people forget to start them later when it is safe to do so.

Issue: For timely thrombolysis of stroke patients

Poor hand-offs or communication might delay timeliness. One US study found major delays between writing the order and giving the thrombolysis drug.[13]

Diagnosis of stroke is delayed. Patients who come in without the typical symptoms are at first hard to diagnose.[14]

CT scan is unavailable. A CT scan must be done before giving the thrombolysis drug.

Ideas for Improvement

Standardized admission orders, discharge checklists or EHRs that generate clinical reminders.

Provide regular feedback to physicians on how frequently their patients are on the right medications.

Create standardized processes for initiation of thrombolysis.

Consider creating a **specialized team to administer thrombolysis,** as one hospital in Calgary has done.[15]

Ensure stroke cases are sent by ambulance directly to designated stroke centres that have the most experience in handling stroke. This has been shown to reduce the time needed to give thrombolysis in Toronto.[16] This is also a recommendation from national stroke guidelines.[17]

What is Ontario doing?

- In 2000, the Ontario Stroke Strategy was launched,[18] establishing designated stroke centres that had the staffing and resources needed to give specialized care, including timely thrombolysis. Ambulances bypassed other hospitals to go directly to these centres. The strategy has since evolved into the Ontario Stroke System, which allocates $30 million a year to support regional stroke systems.[19]
- Safer Healthcare Now! is a national initiative that supports hospitals to improve AMI care.[20]

3.2 Chronic disease management

Chronic diseases are conditions that people live with for years. They are widespread, affecting one in three Ontarians and four out of five seniors aged 65 and over. These conditions tend to worsen gradually over time and can cause pain, suffering, disabling complications or premature death. Although they have no complete cure, lifestyle changes, medical treatments and careful monitoring can reduce the risk of getting them or slow their progression. This year, we profile diabetes, heart disease and lung diseases. We will aim to include other conditions in the future.

What we want	Consequences if we don't get it	Whom does this matter to?
People with chronic diseases should get regular monitoring of their condition (e.g., regular eye[51] and foot[52] exams for diabetes patients) and their risk factors (e.g., smoking, diet, physical fitness).	For eye and foot exams, consequences might include more blindness,[53] skin ulcers[54] and amputations.[55]	The 885,000 Ontarians with diabetes[56] and the 15,000 people admitted to hospital each year with congestive heart failure.[57]
People with chronic diseases should be on the right medications, be knowledgeable about their diseases and know how to manage their own condition.	There might be more deaths and more complications, such as strokes, heart attacks, amputations and other surgeries for poor circulation, kidney failure and dialysis. People might experience avoidable hospitalizations and emergency department visits, which are stressful for patients and waste healthcare resources.	

Monitoring and drug management of chronic diseases

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of diabetic patients who, in the past 12 months, had: — An eye exam — A foot exam	51%* 51%		Only half of diabetes patients have their eyes and feet examined (and this number may be over-reported). In the United Kingdom, 85% of diabetes patients get an eye exam and 80% a foot exam.[87] Everyone with diabetes should be getting these exams.[88] This has not improved in the last three years.
Percentage of elderly diabetic patients (aged 66+) who, in the past year, regularly filled prescriptions for: — ACEI/ARB† — Statin — Both at once	67%** 58% 46%		Slightly fewer than half of elderly patients with diabetes are getting the drugs they need. Physicians have made major improvements over the last six years, but there is still far to go. Experts suggest nearly all patients with diabetes should be on these drugs.[89,90,91]

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Complications of chronic disease management

Indicator	Value	Time trends & comparisons	Bottom line
Rate of emergency department visits or hospitalizations for too low or too high blood sugar per 100 newly diagnosed diabetes patients per year	0.68*		About one in 150 newly diagnosed diabetes patients gets an acute complication of treatment. The rate of this complication has been decreasing.
Percentage of people with diabetes for more than a year who had a serious diabetes complication within a year:			About one in 20 diabetes patients will experience a major complication of diabetes within a year. The rate of these complications has been decreasing in Ontario. We still believe, however, that there is room for improvement.
● Any serious complication	4.5%**		
Surgery for circulation problem (including amputation)	0.18%		
● Death	2.8%		
● Heart attack	1.2%		
● Stroke	0.56%		
● Kidney failure	0.17%		
Adjusted mortality rate (chance of death) in the year after a CHF hospitalization	37***		Over one-third of patients admitted to hospital for CHF die within the next year. This has not improved in the last six years.
Adjusted rate of death per 100 heart attack patients between 30 days and one year after their first heart attack	8.8***		One in 11 patients dies within one year of having a heart attack. This has improved slightly in the last three years.

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Ambulatory care sensitive admissions

Indicator	Value*	Time trends & comparisons	Bottom line
Hospital admission rates per 100,000 population for all ambulatory care sensitive conditions	296		Roughly 36,000 people were admitted to hospital in Ontario last year for complications from chronic disease that could have been prevented with good primary care. This has dropped steadily over the last six years, but there is still room to improve.
Hospital admission rates per 100,000 population for: Angina	44		There has been a huge reduction in hospitalizations for angina — a decrease of more than half over the last six years. This is good news; however, we need to ensure that emergency department visits for angina also decrease.
CHF	52		There has been a modest decrease in hospitalizations for CHF. It is the second most common ambulatory care sensitive condition. There is still room to improve.
Chronic obstructive pulmonary disorder (COPD — e.g., emphysema, chronic bronchitis)	85		Hospitalizations for COPD have not changed. It is now the most common ambulatory care sensitive condition. We believe there is room to improve.
Diabetes	39		Diabetes hospitalizations have decreased modestly. There is still room to improve.
Asthma	42		There has been a major decline in hospitalizations for asthma in the last four years.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Doctors forget to order a test, schedule follow-up or prescribe the right drug.

Doctors may not realize they are not following chronic disease practice guidelines.

Doctors are too busy to do all recommended steps in chronic disease practice guidelines.

Patients are not engaged in their own care. They do not follow physicians' advice on lifestyle or treatments.

There are **out-of-pocket costs to patients**, such as drugs, rehabilitation services, equipment, etc.

Patients are unwilling or unable to adopt lifestyle changes. They may find it too confusing to take all the recommended tests or drugs. Or they may think it is too expensive to eat a healthy diet. Also, patients may not enjoy exercise or think it's too expensive.

Ideas for Improvement

(drawn from Ontario's Chronic Disease Prevention and Management Framework)[97]

Use flow sheets in patient charts. Flow sheets are one-page documents with checkboxes to record compliance with best practices for each patient encounter. Electronic medical records (EMRs) often have these types of reminders built into the software.

Have a well-functioning electronic medical record. A well-designed EMR can generate reminders of when a patient is due for a follow-up visit or diagnostic test, or alert doctors about recommended drugs for a particular disease (e.g., diabetes). They can track key indicators of quality of care (e.g., percentage of patients who get their follow-up tests on time, or percentage of patients in their target range for blood pressure or cholesterol). The "Chronic disease management at New Vision Family Health Team" success story describes how this FHT used an EMR to improve diabetes care.

Use other members of the healthcare team. Nurses, diabetes educators or dieticians can be responsible for ensuring that all the recommended tests, follow-ups and patient education are done. Doctors who are not part of a formal structure such as an FHT can still use their receptionists in time-saving ways during a chronic disease visit — for example, having them check weight, check blood pressure using an automatic cuff, enter the data onto the flow sheet or remove the patient's socks so he/she is ready for a foot exam.

Teach patient self-management,[ ] where patients learn about their conditions and are coached into setting their own reasonable goals for improvement that fit with their lifestyle and that build gradually on each improvement. Ideally this should be carried out by counsellors with certified training in these techniques.[98] For more information, visit http://www.ontpsm.net/index.php.

Simplify routines for patients. Create written instructions or simple checklists. Work with patients to make it easier to get to appointments or tests (e.g., make hours of operation convenient). Look for drugs that can be given once a day or have pharmacists prepare dosettes (packs pre-filled with appropriate drugs for specific times of the day).

Promote lifestyle changes. Educate patients about low-cost healthy foods, such as apples, bananas, broccoli, oats, watermelon, squash, potatoes, kale, eggs, spinach, tofu, milk, wild rice and whole grain pasta. Also, encourage simple ways to introduce exercise into daily life. Disease management educators can work with patients to find physical activities that appeal to individual preferences. For more information on healthy lifestyles, see Health Canada's Healthy Living website at http://www.hc-sc.gc.ca/hl-vs/index-eng.php or the Heart and Stroke Foundation of Ontario's website at www.heartandstroke.on.ca. For more information on healthy eating at a low cost, see http://www.onpen.ca/ToolsManager.asp?fn=previewhandout&popup=true&trid=13832.

Create healthy communities. Ensure communities have walking trails, exercise groups and access to recreational facilities for low-income people.

What is Ontario doing?

- In July 2008, Ontario launched its Diabetes Strategy, a comprehensive diabetes management, treatment and education system.[95] As part of the strategy, the program has given funding for insulin pumps and supplies for many Ontarians.[96]

- The province is developing an online diabetes registry, which will link healthcare providers and laboratories, track patient progress and rates of use of the right drugs or tests, and help patients be involved in their own healthcare.[97]

- Fourteen regional coordination centres and 51 new diabetes education teams have been set up across the province.[98]

- The Quality Improvement and Innovation Partnership has supported 120 FHTs and CHCs to improve drug prescribing, monitoring and patient self-management for diabetes, using quality improvement techniques.[99]

- Partnership for Health is an initiative in the South West LHIN designed to improve diabetes care in primary care practices through an interdisciplinary, team-based approach that encourages partnerships between external partners and primary care.[100]

3.3 Readmissions

The goal of hospital stays is not only to stabilize acutely ill patients, but also to get them well enough that they don't need to come back. We looked at returns to hospital by patients who had been treated for a variety of conditions.

What we want	Consequences if we don't get it	Whom does this matter to?
Patients to have their problems dealt with effectively so they don't need to come back.	We might witness deterioration of health after discharge due to problems with care while in hospital, increased cost of hospital care for a readmission, and lost time and economic productivity for the patient and family.	All Ontarians who visit an emergency department or hospital.

Indicator	Value*	Time trends & comparisons	Bottom line
Medical readmission rates: — AMI (heart attack) — Asthma	5.1% 3.9%		There has been a sharp drop in readmissions for heart attack and asthma.
— CHF — COPD	11.0% 7.7%		CHF and COPD have the highest rates of readmission. There was a modest improvement in readmission rates from FY 2002/03 to FY 2006/07, but no improvement in the last two years.
— Diabetes — Stroke — Gastrointestinal bleed	5.5% 2.9% 1.8%		Readmission rates have not changed in the last six years for diabetes, stroke and gastrointestinal bleed.
Mental health readmission rates: — Depression — Mental health and addictions	4.5% 7.7%		Readmission rates have not changed in the last six years for people with mental health and addictions. There likely is room to improve.
Surgical readmission rates: — Cholecystectomy — Hysterectomy — Prostatectomy	1.2% 1.2% 3.0%		Readmission rates for these three common surgeries have not changed over time, but they are lower than for major medical conditions.
Readmission rates for labour and delivery	0.7%		Readmissions for labour and delivery are uncommon, and there has been no change in the last six years.

Data sources:
* DAD and RPD, FY 2008/09, calculated by ICES. All figures represent readmission rates to any acute care hospital within 28 days of discharge, for people aged 15 to 84 years.

Root Cause of Quality Problems

Patients do not get all the right medications while in hospital. For heart attack, this includes beta-blockers, ASA, ACEI/ARBs and statins. For CHF, it's beta-blockers and ACEI/ARBs. For asthma, often steroids are needed. Patients might not get all necessary drugs if physicians are busy and forget to order them.

Doctors and staff are not aware of the extent of the readmission problem.

Information about the discharge plan is not quickly transferred to the family doctor. As noted in section 9.1, Ontario is slow in getting discharge summaries transmitted.

Patient knowledge gap. Patients may not understand instructions for their care following discharge from hospital — how to take their medications, what signs to look for or whom to call if they have concerns.

Patients don't get the right monitoring. For example, CHF patients who monitor daily weights can spot warning signs of worsening CHF quickly and get their medications adjusted before they need to go to hospital.[55]

Patients develop infections while in hospital. Sometimes the infection, especially a surgical site infection, is not noticed until after the patient goes home.

Patients don't get the right rehabilitation services while in hospital or after discharge. Patients may become frail and susceptible to adverse events that lead to readmissions.

Ideas for Improvement

Utilize standard admission orders, discharge checklists or electronic reminders from hospital information systems. Any or all of these can help remind physicians to order the right drugs.

Feed back information on readmissions, or data on compliance with guidelines, to hospital physicians and staff. If possible, provide this information at an individual physician level to help each doctor develop his/her own quality improvement plans.

Consider database-generated discharge summaries and other strategies discussed in section 9.1.

Simplify instructions and routines for patients. Providing patients with written discharge instructions has been shown to decrease readmissions, particularly for CHF.[101] See section 9.1 for details on the "teach-back" method to ensure patients understand instructions. For asthma, written action plans instruct patients under what circumstances to increase their medications and can help reduce asthma visits.[102]

Dedicated heart failure clinics have been shown to reduce readmissions.[103] These multidisciplinary clinics typically provide intensive patient education about causes of CHF, diet and dietary counselling and a number to call for questions. Patients remain enrolled until their symptoms are stable and they can manage many aspects of their care on their own.

See section 4.1 on ideas to improve infection control.

What is Ontario doing?

- Ontario's Telehomecare program links people with health care professionals to help them better manage chronic diseases like CHF and COPD in the comfort of their own home. The program, run by the Ontario Telemedicine Network, uses different remote technologies to allow users to send data (e.g. blood pressure, weight) to a health care provider and keep them informed about how well their symptoms are controlled. The program can be useful for preventing hospitalizations, readmissions and emergency department visits. Visit http://exweb.otn.ca/index.html for more details.

3.4 Keeping people healthy in long-term care

LTC homes in Ontario take care of people who have difficulty looking after themselves. Although people's ability to live independently tends to decrease as they get older, there are ways for LTC homes to slow this process for some of their residents. Physiotherapists can offer exercises, stretches and other treatments to keep people walking or moving about. Occupational therapists can recommend devices to help people with everyday activities such as dressing and eating. A choice of recreational and social activities and pleasant surroundings can help prevent depression.

What we want	How to get it	Consequences if we don't get it	Whom does this matter to?
Preserve bladder function.	Teach bladder training and strengthening exercises, ensure staff are available to help people get to toilet and offer certain drugs.	Loss of independence, reduced quality of life and increased risk of pressure ulcers.	The 75,000 residents of the 622 LTC homes in Ontario.
Preserve mobility.	Provide exercises, activities, physiotherapy and assistive devices such as canes and walkers.		
Control pain.	Learn to recognize pain, even among those who can't communicate, and give the right drugs.	Needless suffering and reduced quality of life.	
Avoid depression.	Encourage social activities and networks, provide a pleasant environment, recognize warning signs early, offer cognitive behavioural therapy and offer drugs if depression is severe.		
Preserve language, memory and thinking abilities.	Encourage activities to stimulate the brain and social activities; sometimes medications can help.		
Avoid weight loss.	Perform a nutrition assessment and discuss the importance of good meal choices and a pleasant dining experience.	Decreased energy, mood and mobility, and premature death.	

Indicator	Value ↓ BETTER	Bottom line
Percentage of residents with worsening[*] bladder control	19%	Ontario has just started reporting these indicators. It is too early to tell if we are improving, and there are no international benchmarks available yet. Still, we believe there is room for improvement in all of these areas.
Percentage of residents with increasing[*] difficulty carrying out normal everyday tasks (getting dressed, eating, personal hygiene)	27%	
Percentage of residents with pain that got worse recently[*]	15%	Visit our website at http://www.ohqc.ca/en/ltc_homes.php for more information on individual homes.
Percentage of residents with worsening[*] symptoms of depression or anxiety	22%	
Percentage of residents whose language, memory and thinking abilities have decreased recently[*]	10%	
Percentage of residents with recent[††] unintended weight loss	7.6%	

Data sources:
[*] RAI-MDS: April 2008 to June 2009, calculated by CIHI. Under the system, every resident undergoes a detailed assessment of his or her health, at least once every three months, by a staff member at the home specially trained to collect this information. MOHLTC is currently working to implement RAI-MDS in all LTC homes across the province. Results are based on 217 homes that have enough data to report.
[†] From one assessment period to the next: typically, every three months.
[††] 5% loss over three months, or 10% loss over six months.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Issue: Bladder incontinence

Residents/clients or staff lack familiarity with strategies such as prompted voiding to reduce incontinence.

Issue: Decline in mobility

Residents/clients underuse mobility aides, such as canes or walkers, because of feelings of shame in using them, or because they are uncomfortable, or because they were not offered.

There is a lack of exercise or rehabilitation, because services are not available, or not tailored to the individual's needs, or too expensive.

Issue: Pain

Residents/clients have difficulty in recognizing pain, particularly among those with dementia.

Providers are reluctant to prescribe pain medications, because of fear of creating addiction.

Issue: Depression

Residents/clients experience social isolation, especially with initial move to LTC or CCC.

A decline in general health makes people feel depressed.

Deaths of friends or family, which become more common with age, can lead to depression.

Ideas for Improvement

Staff training and standard protocols for implementing prompted voiding routines. Ensure new or short-term staff are familiar with these techniques or partnered with those who are.

Encourage use of mobility aides. Connect residents/clients with others who have overcome shame of mobility aides and who now live more active lives. Ensure that users are well trained and comfortable with how to use them.

Make assessment of need for mobility aides routine.

Conduct routine checks of mobility aides to ensure proper size and position.

Offer a variety of different exercise or rehabilitation therapies.

Use visual analogue scales and chronic pain flow sheets to recognize and monitor pain.[ ] Make them part of routine assessments of residents/clients. Train all staff in their use.

Develop standardized protocols for pain control, agreed to by all physicians, outlining how to use short-acting and long-acting narcotics. Maximize use of safe medications, such as Tylenol. Consider adding non-addictive drugs for chronic pain (e.g., low-dose nortriptyline or gabapentin).[ ] Consider non-drug alternate therapies for pain control, such as acupuncture.[ ]

Screen for warning signs of depression.

Offer social activities or social networks.

Offer counselling or anti-depressant medications.

What is Ontario doing?

- The Residents First initiative (2010) aims to help LTC homes reduce falls, pressure ulcers, incontinence and emergency department visits, and improve resident satisfaction. It provides quality improvement training, leadership development and measurement tools to participating homes. This year, 100 homes will be recruited and participation will be offered to all 622 homes in the next five years.

3.5 Keeping people healthy in complex continuing care

Complex continuing care (CCC or chronic care) provides continuing, medically complex and specialized services to both young and old, sometimes over extended periods of time.[xx] CCC is provided in hospitals for people who have long-term illnesses or disabilities typically requiring skilled, technology-based care not available at home or in LTC facilities. CCC provides residents with room, board and other necessities in addition to medical care.

What we want	How to get it	Consequences if we don't get it	Whom does this matter to?
Preserve bladder function, mobility; control pain; avoid depression, weight loss.	See section 3.4.	See section 3.4.	In FY 2007/08, there were 22,391 residents in hospital-based CCC facilities.[xx]
Preserve communication abilities.	Offer speech language therapy.	Needless suffering and reduced quality of life.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of CCC residents with less bladder control	17%		One in six CCC residents has worsening bladder control in Ontario. There has been a minor improvement in the number.
Percentage of CCC residents who have improved their performance of normal everyday tasks (getting dressed, eating, personal hygiene)	27%		Only one-quarter of CCC residents are showing an improved ability to perform normal everyday tasks.
Percentage of CCC residents with disruptive or severe pain	25%		One in four CCC residents experiences severe pain. This number is decreasing. There has been a major improvement over the past six years.
Percentage of CCC residents with increase in depression or anxiety	17%		One in six CCC residents experiences increased depression and anxiety. This number has decreased steadily over the last few years, but there is room for improvement.
Percentage of CCC residents with communication decline	9.8%		Ten percent of all CCC residents are less able to communicate with others. There has been major improvement in this rate.
Percentage of CCC residents whose mobility — walking or in a wheelchair — has declined	16%		One in six CCC residents is less mobile. There has been some improvement.

Please see section 3.4 for root causes of quality problems and ideas for improvement.

3.6 Keeping people healthy in home care

Long-stay home care clients[a] are people with chronic conditions or complex needs who require healthcare or personal support services (e.g., homemaking) for 60 days or longer. Although people's ability to live independently tends to decrease naturally with age, there are ways that home care workers can slow this process for some.

What we want	How to get it	Consequences if we don't get it	Whom does this matter to?
Preserve bladder function; mobility; communication abilities; language, memory and thinking abilities. Control pain. Avoid depression, weight loss.	See sections 3.4, 3.5.	See sections 3.4, 3.5.	On any given day, approximately 185,000[108] Ontarians are receiving services through CCACs;[109] 572,950[110] clients received home care services from CCACs in FY 2007/08.[111]

Indicator	Value ↓ BETTER	Bottom line
Percentage of clients whose bladder function has recently decreased or did not improve compared to previous assessment	46%	Ontario has just started reporting these indicators. It is too early to tell if we are improving, and there are no international benchmarks available yet. Still, we believe there is room for improvement in all of these areas.
Percentage of clients with a new problem with normal everyday tasks (getting dressed, eating, personal hygiene) or an old problem that is not getting better	44%	
Percentage of clients with pain that is not well controlled	22%	
Percentage of clients with serious signs of depression (e.g., profound sadness, withdrawal from normal activities)	9%	
Percentage of clients who recently developed a decline in their language, memory and thinking abilities	48%	
Percentage of clients with a new problem communicating or understanding others or an existing problem that did not improve over a period of time	16%	
Percentage of clients with recent unintended weight loss	3.5%	

Please see section 3.4 for root causes of quality problems and ideas for improvement.

3.7 Avoidable emergency department visits

Emergency departments are meant to provide care for serious illnesses and injuries that need fast, highly skilled care. Often people go to the emergency department for minor problems that can be treated in a doctor's office or after-hours clinic. Here we look at the rate of potentially avoidable trips to the emergency department by Ontarians.

What we want	Consequences if we don't get it	Whom does this matter to?
People with non-urgent conditions – colds, sore throats, ear aches, bladder infections – are treated not in the ED but in other settings (e.g. primary care, after-hours clinic or Urgent Care Centres).	Having non-urgent cases in ED uses up resources to treat those who need the services more. (Rural communities may be an exception because small towns often can't support an after hours clinic, so it makes sense to use emergency for less urgent care).	One in five Ontarians visits an ED every year;[115] there are about 2.7 million ED visits per year in major cities within Ontario.[116]
LTC residents with similar non-urgent, low acuity conditions are treated within their LTC home and are not sent to the ED.[117]	Greater convenience for the resident; avoid exposure to unfamiliar places, which can be distressing for people with dementia.	The 75,000 residents of the 622 LTC homes in Ontario.
LTC residents who develop worsening of a medical condition (e.g. diabetes, dehydration) have their problem identified and treated early before it becomes necessary to send to the ED.	A visit to the ED that could have been avoided. Handling the problem sooner could also reduce harm to the resident from worsening of the medical condition.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of emergency department visits in major Ontario cities for non-urgent conditions that could have been managed elsewhere	3.9%*		The proportion of visits to the emergency department for minor conditions that could have been treated elsewhere has been steadily decreasing during the past six years.
Number of avoidable emergency department visits per 100 LTC residents per year	23**		Avoidable emergency department visits are common among LTC residents. There has been no change in the last six years. There is likely major room for improvement.
Number of low acuity emergency department visits per 100 LTC residents per year	8.3***		The number of low acuity emergency department visits by LTC residents has decreased over the last six years. This is good news, but there is likely still room to improve.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Issue: non urgent ED visits

People do not understand the purpose of the emergency department or may be unaware of alternatives to the emergency department, such as after-hours or walk-in clinics.

Poor access to primary care. People will use the emergency department if they don't have a primary care doctor, or cannot get a timely appointment with their doctor, or if after-hours service is not available.

Patients with chronic diseases have poorly managed conditions and experience health crises. Patients may not follow doctors' orders for self-management or are not properly managed by their primary care providers.

Issue: Avoidable emergency department visits by LTC residents

Staff are uncomfortable with handling relatively minor emergencies.

An on-call physician is not available to assess.

There is a lack of diagnostic equipment in LTC (X-ray, urgent lab services, etc.), which requires residents to go to hospitals.

The family exerts pressure to send resident to an emergency department for assessment. This may occur if the family is not confident in the staff's ability to handle the situation.

Ideas for Improvement

Public education and awareness campaigns about the appropriate use of the emergency department. Consider further promotion of the use of the Telehealth Ontario toll-free number to talk with a nurse to help assess when to go to the emergency department.[118]

Improve access to primary care. Consider better organization of doctors' offices and management of patient appointments to reduce wait times, and provide after-hours service (see section 2.2).

Better management of patients with chronic diseases. Patients with chronic diseases need to be more engaged in the care and management of their conditions. Primary care of these patients should be carefully managed to avoid crises requiring immediate attention (see section 3.2).

Increase training of staff to handle and assess minor emergencies.

Consider use of the Telemedicine network to access expert advice with a video link.

Consider redesign of call schedules — for example, sharing an on-call physician between homes in close proximity to each other.

Consider use of nurse practitioners, either in on-call schedule or to mentor other staff.

Reassure families that strategies above have been taken to ensure proper assessment within the home. Inform families of potential risks of emergency department transfers (e.g., hospital-acquired infection, worsening confusion, wandering, falls in an unfamiliar environment).

What is Ontario doing?

- In early 2009, MOHLTC set up a website — Your Healthcare Options (http://www.ontario.ca/healthcareoptions) — to provide information about different ways to get healthcare when needed (e.g., walk-in clinics, urgent care centres and FHTs). Public awareness campaigns continue to encourage the use of Telehealth Ontario's toll-free services, which give advice on whether an emergency department visit is necessary.

4.1 Hospital infections

People who enter a hospital should expect that the hospital will do everything it can to prevent infections that they might acquire during their stay. These infections cause an unnecessary waste of healthcare resources and suffering for the patient, and can sometimes result in death.

What we want	Consequences if we don't get it	Whom does this matter to?
Fewer hospital-acquired infections.	More deaths, longer hospital stays, unnecessary hospital costs, and more disability and psychological effects.[119]	Anyone admitted to hospital; in FY 2008/09, there were more than one million hospital stays in Ontario.[120]
Complete adoption of prevention practices, such as effective handwashing and protocols to prevent surgical site infections.	More hospital-acquired infections.[121, 122]	

Indicator	Value*	Time trends & comparisons	Bottom line
Rate of hospital-acquired C. *difficile* disease per 1,000 bed days	0.27		For a typical six-day hospital stay,[123] the chance of getting C. *difficile* is about one in 600. These rates have decreased in the last year. Ontario's rates compare favourably to other places.[124] In 2008, Ontario added infection control resource teams to help deal with outbreaks,[125] which may have helped.
Infections per 1,000 bed days:[126] — Methicillin-resistant *Staphylococcus aureus* (MRSA) — Vancomycin-resistant Enterococci (VRE)	0.03 0		For a typical six-day hospital stay,[127] the chance of getting a bloodstream MRSA infection is about one in 6,000. We have just started reporting these indicators and it is too early to tell if we are improving. There are no international benchmarks for these infections yet.
Cases per 1,000 bed days in the ICU:[128] — Ventilator-associated pneumonia — Central line infection	2.3 1.2		For a typical four-day stay in the ICU,[129] the chance of getting ventilator-associated pneumonia is one in 110, while the chance of getting a central line infection is one in 210. Many hospitals in Canada and the US have eliminated ventilator-associated pneumonia and central line infection[130, 131] by simple protocols such as keeping the head of the bed at 45 degrees and using proper sterile techniques.[132, 133] Ontario hospitals should push for the same.
Percentage of hip and knee replacement surgeries where the right antibiotics were given at the right time to prevent surgical site infection (SSI)	93%		We have just started reporting this indicator and it is too early to tell if we're improving; however, many hospitals have achieved 96 to 100% by using standard protocols before surgery.[134] Other hospitals should too, and should also ensure that the right antibiotics are given at the right time for other types of surgery.
Hand hygiene compliance among health-care providers before patient contact	53%		Only half of Ontario healthcare providers wash their hands before seeing their patients — that's too low. There is large room for improvement.

Data sources:
* MOHLTC. See also http://www.ontario.ca/patientsafety. Most recent values: C. difficile — December 2009; MRSA, VRE, ventilator-associated pneumonia, central line infection, surgical site infection prevention — July to September 2009; hand hygiene — FY 2008/09. All infection rates are determined by the number of patients newly diagnosed with hospital-acquired infection, divided by the number of patient days in that month, multiplied by 1,000. Patient days are the number of days spent in a hospital for all patients.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Providers forget to follow all recommended procedures for infection control.

Providers are not comfortable following recommended procedures because they're not familiar with them. For example, ventilator-associated pneumonias can be prevented by giving daily "sedation vacations," which dramatically lower the time spent on a ventilator.[135] However, this requires skill, as patients can show pain, anxiety or a temporary drop in oxygen in the blood.

Providers are unaware of how poorly they are following infection control guidelines. Providers may think they are following protocols, but in fact are not.

Physicians refuse to follow infection control guidelines. For example, some doctors may not do full sterile protocol for central line infections because it takes too much time and they are skeptical of evidence on its effectiveness. "I've never had an infection," they might say.

FOCUS: Poor compliance with handwashing protocols.

Doctors feel handwashing wastes time.

Handwashing stations are not conveniently located. Doctors and nurses have to go out of their way to wash hands before and after patient contact.

Handwashing solution irritates skin and causes chapped hands.

Ideas for Improvement

Use checklists and flow sheets. For ventilator-associated pneumonia, use checklists to remind everyone to keep the head of the bed at 45 degrees. For surgical site infection prevention, checklists before surgery can ensure the right antibiotics are given at the right time.[136] Give housecleaning staff a checklist of items that need daily cleaning or at discharge.[137]

Ensure only those trained to do intensive care medicine work in ICUs. Studies show that restricting ICU privileges to specialists with this training saves lives.[138] Arrange for staff who are uncomfortable with any procedure to be mentored by those with more experience.

Regularly monitor compliance with protocols and report on performance.[139, 140, 141] Report statistics by individual hospital. Within a hospital, it can be helpful to report by individual worker type (e.g., doctors, nurses) and, if possible, by individual provider to give feedback to the provider.[142]

Strategies for physician buy-in. Identify physician leaders in the hospital to work with those refusing to comply. Review clinical evidence. Review the local hospital's infection statistics and make the case for change. Work with other staff ideas to make the process as efficient as possible (e.g., always have supplies ready). If all else fails, work with the hospital board to revoke hospital privileges for refusal to practice at the standard of care.[143]

Create a culture of safety.[144] Experts believe that leaders need to encourage doctors and staff to report infections and emphasize that doing so will not lead to punishment but instead to activities to analyze and then fix root causes of infections. Staff need to know that they will be supported by leadership if they point out instances where someone is not following protocols.

Work handwashing into routines, such as washing hands while introducing yourself to patients.

Put handwashing stations in convenient areas,[145] such as by patient bedsides, at the entrance to rooms, at the entrance to wards and by elevator doors.

Provide products that have moisturizers. Hand sanitizers and hand soap are available in formulations that are milder and contain moisturizers to protect skin.

What is Ontario doing?

- MOHLTC has launched the "Just Clean Your Hands" campaign for hospitals, which includes educational materials for staff, patients and visitors, and audit tools to monitor handwashing rates.[146]
- In 2008, MOHLTC mandated public reporting, by hospital, of each of the different types of infections listed in this section.[147]
- MOHLTC has also funded infection control practitioners and infection control resource teams to help deal with outbreaks.[148]

4.2 Adverse events

An adverse event is one where a patient experiences a sudden, unintended, undesirable change in health that was caused by healthcare services. In many instances, these events could have been prevented because they were due to medical error. Examples of error include forgetting to give a drug or treatment, giving the wrong treatment, doing a procedure with improper technique, not recognizing a warning sign early or making the wrong diagnosis.

What we want	Consequences if we don't get it	Whom does this matter to?
As few cases as possible of pulmonary embolism (blood clot in lung) or deep vein thrombosis (DVT; blood clot in leg) among patients getting surgery. People who cannot get up and about after surgery are at high risk of getting these clots,[151] and they should get blood thinners to reduce the risk.	Blood clots in the legs can break off and end up in the lung, leading to a pulmonary embolism. The chance of death from DVT is 5% and from pulmonary embolism, 33%.[152] Pulmonary embolism is the most common preventable cause of hospital death.[149] These events also increase hospital costs[153] and can lead to long-term problems with blood circulation in the leg.[154]	In FY 2005/2006, there were 1,184,000 day surgeries and 279,000 acute in-patient surgical discharges in Ontario.[155]
Avoid nursing-sensitive adverse events, such as urinary tract infections (UTIs), pressure ulcers, fractures from falls and pneumonia, while in hospital. Research suggests these events are related to the quality and availability of nursing care.[156]	Pain and suffering, longer stay in hospital and risk of death.	The Ontarians who account for the more than one million hospital discharges each year.[157]

Indicator	Value	Time trends & comparisons	Bottom line
Adjusted rate of in-hospital pulmonary embolism and DVT per 100 surgical procedures	0.49*		**After surgery, one out of every 200 patients develops a serious blood clot. This has not improved in the past six years. We believe there is room for improvement.**
Nursing-sensitive adverse events: — Medical[158] — Surgical[159] — Labour and delivery[160]	1.2%** 0.2% 2.0%		**Adverse event rates related to nursing care have either stayed the same or dropped slightly. There likely is room to further reduce adverse events; some high-performing hospitals in Ontario have better results (e.g., 1% or lower for labour and delivery, 0% for surgical).[161]**

Data sources:
* DAD, FY 2008/09, calculated by ICES.
** DAD, FY 2006/07, from Hospital Reports 2008.

Root Cause of Quality Problems

Doctors or other professionals forget to follow procedures.

Ideas for Improvement

Standard orders or checklists for blood thinners after surgery.

Use a standard risk scoring sheet for all ICU patients, with standard orders for blood thinners for those considered at high risk for DVT.[163]

For prevention of falls, conduct a standardized risk assessment for falls and consider checklists for recommended practices for those at high risk (e.g., keep bed low, make call bell or commode easily accessible, provide no-slip footwear, check for clutter, arrange for physiotherapy or assistive devices for walking); see section 4.6 for more details.

Similarly, for pressure ulcer prevention, conduct a risk assessment and consider standard orders or checklists for recommended practices (special mattresses or padding, turning immobile patients regularly, placing labels in chart or by bed to remind staff who is at high risk of an ulcer); see section 4.6 for more details.

For preventing hospital-acquired pneumonia, ensure routine handwashing occurs (see section 4.1), encourage routine use of incentive spirometry after surgery to promote deep breathing and ensure good pain control for those who have pain with coughing after surgery.

Measure compliance with guidelines and report performance regularly. Feed back to surgeons data on their rate of pulmonary embolism and DVT or compliance with use of blood thinners. Regularly feed back data to nurses on nursing-sensitive adverse events.

Doctors or nurses make judgment errors because of fatigue.[162]

Set limits on on-call hours. Hospitals can set policies to limit the consecutive hours on call or require rest time after being on call.

Staff have too little time to do all recommended procedures.

Increase available staff time. Many nursing-sensitive adverse events have been shown to occur more frequently when there are fewer nurses available.[164] Although increasing nursing staff time at the bedside can be achieved by adding more nurses, it is also important to first consider how the same staff could do more bedside care by eliminating unnecessary tasks from their jobs.[165]

4.3   Mortality in hospital

There are many things that hospitals strive to provide patients — timely service, a positive experience, recovery from their medical condition — but the bottom line is the ability to save lives in complex, challenging situations and prevent needless deaths from medical errors. Mortality is measured in two main ways: the hospital standardized mortality ratio (HSMR*), which compares how many deaths occurred to what might be expected given the types of cases the hospital sees, and mortality rates for specific medical conditions or surgeries.

What we want	How to get it	Whom does this matter to?
Death rates for hospital patients as low as possible, for: – Heart attack – Surgery (e.g. complicated cancers, cardiac bypass) – Other common conditions (heart failure, pneumonia, COPD, septicaemia, lung cancer, stroke, respiratory failure, hip fracture)	– Ensure patients get the right drugs, tests and treatments. – Prevent blood clots. – Follow surgical checklists. – Make sure complicated procedures are done in places with lots of experience doing them. – Don't delay time-sensitive treatments (such as clot-busters for heart attack and stroke and antibiotics for serious infections). – Follow infection control procedures such as handwashing. – Ensure quality and safety protocols are followed (e.g., for surgical site infections, ventilator-associated pneumonias). – Implement information technology systems to prevent drug errors.	The Ontarians who account for the more than one million hospital discharges each year.[166]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of reportable hospitals whose HSMR has decreased compared to the previous year	73%*		**Seven out of 10 reportable hospitals experienced a decrease in their HSMR score last year. This number has increased every year since 2006. There is still room to improve.**
Adjusted in-hospital rate of death within 30 days per 100 patients admitted for stroke	18%**		**About one in six stroke patients dies shortly after his or her stroke. There has been minor improvement from 1998 to 2006. During this time Ontario's stroke strategy was put in place,[167] which included dedicated stroke units, protocols and public education on stroke symptoms. It is possible this strategy may have helped.**
Adjusted rate of death within 30 days per 100 patients admitted for heart attack	9.8%***		**One in 10 patients dies within a month of having a heart attack. Mortality has steadily declined in this decade, probably because of newer treatments (e.g., bypass or stents right after a heart attack) and greater use of life-saving drugs. Mortality could be reduced further by increasing use of the right drugs (see section 3.1).**

Data sources:
* CIHI, 2008.
** CIHI, 2006.
*** DAD, RPD, FY 2007/08, calculated by ICES.
* The HSMR is the ratio of **actual** (observed) deaths to **expected** deaths. It focuses on the diagnosis groups that account for the majority of in-hospital deaths. Using a logistic regression model, it is adjusted for several factors that affect in-hospital mortality, including age, sex, length of stay, admission category, diagnosis group, co-morbidity and transfer from another acute care institution. An HSMR equal to 100 suggests that there is no difference between a local mortality rate and the average national experience, given the types of patients cared for. An HSMR greater or less than 100 suggests that a local mortality rate is higher or lower than the national experience, respectively.
See http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=hsmr_results_home_e, HSMR, CIHI.
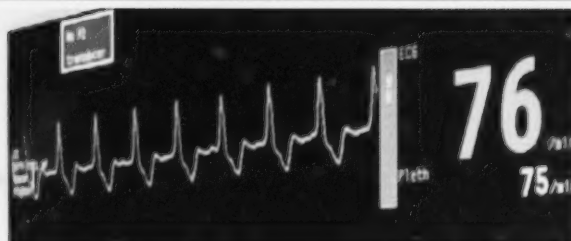
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See sections 3.1, 4.1 and 4.2 for specific change ideas related to heart attack, stroke, heart failure, hospital infections, pulmonary embolism and missed diagnoses that could affect mortality.

Root Cause of Quality Problems

Life-saving best practices are not followed. This includes the right drugs or services for heart attack, stroke, congestive heart failure, diabetes or other major medical conditions.

Inexperience with handling certain conditions exists. Mortality rates are lower for esophageal, pancreatic and liver cancer surgery,[168] cardiac surgery,[169] abdominal aneurysm repair[170] and carotid endarterectomy[171] when done by doctors and in hospitals that perform more surgeries.

Delivery of time-sensitive care is delayed. It is important for heart attack patients to get thrombolysis or surgery quickly, for stroke patients to get thrombolysis quickly and for pneumonia patients to get antibiotics as soon as possible.

Failure to rescue. Warning signs of rapid deterioration might not be recognized or acted on quickly because of poor communication, shift changes, inexperience or being too busy or distracted.

There is no accountability for patient outcomes. There are no negative or positive consequences for hospitals or providers for having a higher or lower mortality rate.

Ideas for Improvement

Standardized orders and checklists. Use standard admission orders or discharge checklists for these conditions to make sure the desired drugs are given. Use surgical checklists to make sure that operating room staff have verified the identity of the patient, the operation, allergies, anticipated blood loss, antibiotics to be given, etc.[172]

Dedicated centres of excellence. Canadian stroke guidelines recommend that patients be sent to designated stroke centres wherever possible,[173] because such centres have better outcomes. Ensure certain surgeries are done only in places that have a minimum volume of cases, and where only surgeons with a minimum volume per year do the surgery.

Develop standardized processes or put clinical pathways in place. Identify in advance who does what, when and in what order. For example, administer thrombolysis in ambulance or by nurses, and have key people immediately available to make decisions (e.g., a person to read an ECG or CT scan of the brain).

Consider **rapid response teams**,[174] where clinicians with critical care expertise can be called at a moment's notice by anyone to assess and stabilize a patient whose condition is deteriorating. Consider teaching **communication techniques such as situation-background-assessment-recommendation**, which can help nursing staff accurately describe the critical nature of a situation to a physician.[175]

Consider incorporating volume and outcome expectations for these surgeries into accountability agreements with hospitals. Or, provide funding only to those who meet minimum volume standards.

What is Ontario doing?

- On December 30, 2008, eligible hospitals were required to report publicly on their HSMR.[176] Reporting is mandatory on an annual basis.
- Starting on July 31, 2010, all hospitals with an operating room will be required to report publicly on their compliance with using a surgical safety checklist. Surgical safety checklists cover the most common tasks involved in the operating room, reducing the reliance on memory. They have been proven to reduce the number of deaths and complications associated with surgical procedures.[177]
- Safer Healthcare Now! is a national initiative that aims to improve quality of care through 10 interventions that, when reliably implemented, reduce avoidable mortality (e.g., due to AMI, hospital-acquired infections, DVT and pulmonary embolism (PE).[178]

4.4 Drug safety

Medications can save lives and improve quality of life, but can also come with side effects. These side effects are often much more severe among the elderly because older people often have more complex medical problems that can interact with the drugs in a bad way. Approximately 42% of all adverse drug events are preventable.[179] We can prevent them by avoiding certain drugs known to be dangerous in the elderly and making sure there is no confusion on what drugs or doses a person should be on.

What we want	Consequences if we don't get it	Whom does this matter to?
Avoid prescribing certain medications that have serious side effects for the elderly and that have safer alternatives (the "Beers" list of drugs to avoid,[180] and the Agency for Healthcare Research and Quality (AHRQ) "never prescribe" list of drugs).[181]	Increased risk of falls, dizziness, confusion, death; irritating side effects such as dry mouth.	Drug safety affects all 13 million Ontarians, especially the 1.8 million people aged 65 and over.[182]
Avoid prescribing antipsychotic or anti-anxiety drugs without a specific reason to do so.	Increased risk of falls, dizziness, confusion, stroke and death.[183]	
Make sure people have up-to-date medication lists from their regular doctor.	Increased risk of drug errors that can lead to temporary symptoms, disability or death.	

Indicator	Value	Time trends & comparisons	Bottom line
Number of elderly LTC residents prescribed the following: — A drug that should be avoided in the elderly (Beers list) — A drug that should never be given in the elderly (AHRQ list)	17%* 0%		The use of drugs that should be avoided in the elderly is gradually decreasing. There is likely still room for improvement. The good news is that LTC residents in Ontario are no longer prescribed medications that should never be given to the elderly at all.
Percentage of elderly LTC residents prescribed the following: – An antipsychotic drug without a psychotic condition – Certain anti-anxiety or hypnotic drugs not supported by a specific diagnosis	17%** 30%		Visit our website at http://www.ohqc.ca/en/ltc_landing.php for more information.
Percentage of new LTC home residents (aged 65 and above) started on certain drugs where there was no clear reason to use them: — Antipsychotics — Benzodiazepines	15%*** 25%		Shortly after entering an LTC home, one in six residents gets an antipsychotic drug and one in four gets a drug for anxiety or sleep that they were not receiving before (i.e., the LTC home physician — not the previous family doctor or hospital specialist — started the drug). These drugs should be avoided as much as possible. There has been only slight improvement from 2005 to 2008.
Percentage of CCC residents on antipsychotic medication with no clear reason for using them	23%†		Almost one-quarter of CCC residents are receiving antipsychotic medications for no clear reason. This rate has not improved over the last four years.
Percentage of physicians who routinely give their patients a written list of the medications they are currently taking	13%††		Only one in seven Ontario doctors gives patients a list of medications taken. There is room to improve. Ontario and Canada are behind several major countries surveyed.

Data sources:
* RPD, ODBD, OHIP Claims Database, DAD, FY 2008/09, calculated by ICES.
** CCRS, RAI-MDS, FY 2008/09, calculated by CIHI.
*** RPD, DAD, OHIP Claims Database, Client Profile Database, ODBD, April 2007 to February 2008, calculated by ICES.
† CCRS, FY 2008/09, calculated by MOHLTC.
†† CFS (2009).

Root Cause of Quality Problems

Inappropriate resident behaviours, such as aggressiveness, lead physicians to prescribe antipsychotics or sedative-hypnotic drugs.

It can be difficult to stop drugs that patients have been on for years, because of an addiction or tolerance to the drug. Withdrawal symptoms, such as insomnia or headaches, might appear when a drug is stopped.[104]

Doctors may be unaware they are prescribing potentially dangerous drugs.

Doctors or pharmacists may not know of all drugs a patient is currently taking. This can be a problem for patients in home care who see multiple doctors (e.g., several specialists) and fill prescriptions at different pharmacies. Doctors may not have a complete list of prescriptions and pharmacies may not have complete prescription records for pharmacists to review.

Ideas for Improvement

Non-drug approaches to inappropriate behaviour.[105] This includes conflict de-escalation techniques, having good eye contact, using simple sentences and one-step instructions, and avoiding making the resident feel rushed.

Gradually wean people off these drugs[106] (e.g., decrease the dose a bit every week for several weeks).

Consider non-drug approaches, such as cognitive-behavioural therapy, to address the underlying cause of anxiety.[107]

Switch to safer drugs. For example, some antidepressants are preferable to sedative-hypnotics for anxiety.[108]

Consider treatments for withdrawal side effects, such as carbamazepine for benzodiazepine withdrawal.[109]

Monitor drug utilization patterns. Provide feedback to individual LTC homes on their use of potentially dangerous drugs.

Academic detailing programs.[110] Pharmacists working for these programs visit doctors in their own offices to promote the use of the most scientifically proven drugs in different situations. Unlike drug companies, their information is unbiased.

Have a pharmacist regularly review patients' drug lists. Pharmacists are well trained to identify potential drug interactions and can flag potentially dangerous doses or prescriptions.

Remove the most dangerous drugs from the formulary of LTC homes.

Implement a well-designed electronic medical record (EMR). Doctors enter prescriptions electronically, which can eliminate errors due to poor handwriting. The EMR can give warnings about potentially harmful prescriptions. An electronic health record (EHR), where information can be shared and exchanged among different doctors and pharmacists, can help ensure the drug list is always up to date.

Encourage patients to fill drug prescriptions at the same pharmacy. This can make it easier for the pharmacist to be on the lookout for drug interactions.
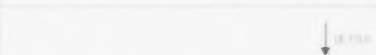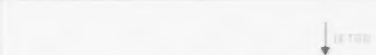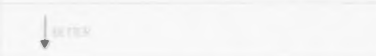
What is Ontario doing?

- The MedsCheck program allows Ontarians to meet with a pharmacist to review all their medications, check for drug interactions and get a complete, up-to-date list of drugs taken.[111]
- Ontario has signalled its intent to set up an academic detailing program.[112]
- Ontario's Task Force on Medication Management in LTC homes, established in 2008, aims to identify methods to maximize appropriate medication management practices.[113] The report is due for public release in 2010.

4.5 Avoiding harm in long-term care and complex continuing care

LTC residents are typically individuals who cannot live independently and need lots of supportive care. CCC residents have even greater needs for medically complex and specialized services in order to function from day to day. Individuals in both settings often have physical disabilities or loss of cognitive function (memory, language and thinking abilities), and living with these impairments often affects their mood. Because of all of these factors, they are at high risk for incidents that could lead to unintended harm. It's important that healthcare providers do everything they can to minimize the risk of harm.

What we want	Consequences if we don't get it	Whom does this matter to?
Avoid falls.	Injuries, fractures, death; more emergency department visits, hospitalizations.	The 75,000 residents of the 622 LTC homes in Ontario and the residents in CCC.
Avoid new pressure ulcers.	Pain and suffering, worsening infection, risk of amputation and even death.	
Avoid physical restraints.	Loss of control and depression, paradoxically more falls and safety hazards from the restraint itself (e.g., asphyxiation).[194]	
Avoid worsening behaviour (e.g., aggression or wandering).	Physical or psychological harm to the resident, other residents and staff.	
Avoid bladder infections.	Can lead to more serious infections.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of residents with a new[¹] pressure ulcer (stage 2 or higher): —●— LTC —●— CCC	2.8%* 5.5%**		One in 36 residents develops a new, serious pressure ulcer every three months; that's about one in nine residents each year. One in 18 CCC residents develops a new pressure ulcer every three months, twice as many as LTC residents. There has been some improvement in the past five years.
Percentage of LTC residents whose behaviour has recently[¹] worsened	11%*		We have just started reporting these indicators and there are no international benchmarks available yet; however, we believe there is very likely room for improvement. Please see our website at http://www.ohqc.ca/en/ltc_landing.php for more information.
Percentage of LTC residents with a recent[¹] bladder infection in LTC	4.5%*		
Percentage of residents who were physically restrained —●— LTC —●— CCC	17%* 16%**		There is room to reduce restraint use. Many places are adopting zero-restraint policies, and many countries have rates much lower than Ontario's.[195]
Percentage of LTC residents who had a fall in the last 30 days	13%*		Falls are common; one in seven LTC residents has had a fall in the past month. There has been no change in the rate of serious falls resulting in an emergency department visit in recent years. While we do not yet have a benchmark or target for falls, we believe that there is very likely room for improvement.
Rate of falls among LTC senior residents (aged 65+) resulting in an emergency department visit or in-patient hospitalization per 100 resident years	14%***		
Percentage of CCC residents who do not have a recent prior history of falling, but fell in the last 90 days	3.5%**		

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For falls, see section 4.6.

Root Cause of Quality Problems

Issue: Residents develop pressure ulcers

People at risk for ulcers are not identified early.

Staff are unaware of extent of problem.

There is a lack of training on best practices, such as how often to reposition a resident who can't move, how to move a frail resident without shearing the skin and monitoring for early signs of ulcers.

There are inconsistent practices among staff or physicians.

There is not enough time to do all best practices. Turning residents who are immobile requires staff time.

There is a lack of appropriate equipment.

Issue: Use of restraints

Some staff or family members may believe restraints prevent falls. Family members may ask staff to use them.

There are concerns that residents will wander if not restrained.

Staff are too busy to care for all residents. Staff may not have time to monitor residents who may wander or be unstable when standing or moving around unassisted, and may feel the need to use restraints to manage their workload.

Issue: Worsening behaviour

Residents are frustrated or upset.

Worsening behaviour is part of their disease (e.g., Alzheimer's disease or dementia).

Ideas for Improvement

Ensure standard risk assessments for pressure ulcers are done for all residents.

Feed back real-time data on pressure ulcer incidence and prevalence to all staff.

Provide appropriate training and support. Training can be reinforced with regular monitoring of performance and pairing inexperienced staff members with those experienced in protocols.

Develop standard orders — for example, for treating pressure ulcers — that all physicians can agree to.

Eliminate other activities that waste time, such as duplicate documentation, so staff can spend more time on care at the bedside.

Increase the availability of appropriate equipment, such as mattresses that reduce the risk of pressure ulcer formation.

Education about the hazards of restraints. Research shows that restraints can increase falls, as well as increase the risk of pressure ulcers and asphyxiation, worsen an injury if a fall occurs while in restraint, and worsen depression and a sense of helplessness.[196]

Use alternatives to track when a potential wanderer gets up. Examples include bed or door alarms and movement control systems to signal when someone leaves unexpectedly. This gives staff time to redirect the person elsewhere.[197]

Ensure adequate staffing. The People Caring for People report highlighted increased time is needed for direct care, as well as support for programs such as therapists and recreational activities.[198]

Eliminate activities that waste time, such as duplicate or unnecessary documentation.

Improve communication. Use good eye contact, speak slowly and in simple sentences, and avoid making the resident feel rushed. Recognize there may be language barriers between staff and residents and work to find a suitable solution.[199]

Train staff in managing conflict and de-escalation techniques.[200]

Attempt alternatives to drug therapy as a first-line treatment. Try social activities, networks and activities that encourage brain stimulation. Consider drugs, but only as a last resort.

What is Ontario doing?

- The Pressure Ulcer Awareness Program recently held a year-long quality improvement initiative involving 30 LTC homes in Ontario, which aimed to reduce the incidence and prevalence of serious ulcers by 50%. It accomplished its goal in January 2009.
- See section 3.4 for information on the Residents First initiative.

4.6 Avoiding harm in home care and the community

Long-stay home care clients are people with chronic conditions or complex needs who require healthcare services (e.g., nursing or rehabilitation) or personal support services (e.g., homemaking or meal delivery) over a long period of time. They often have physical disabilities that make them more prone to falls, injuries, skin ulcers and other problems. Home care workers can help reduce the risk of harm.

What we want	How to get it	Consequences if we don't get it	Whom does this matter to?
Avoid falls or other injuries.	Carefully assess hazards in the home (e.g., poor lighting, clutter that could lead to a fall) and safety devices (e.g., handrails).	Risk of temporary or permanent disability and death; more emergency department visits and hospitalizations.	All elderly or frail Ontarians living at home; those identified as long-stay home care clients are at particular risk — there are 170,000 long stay clients in home care (approximately one-third of all home care clients in Ontario).[20]
Avoid skin ulcers.	Assess skin for risk of ulcer; avoid putting too much pressure on skin.	Pain and suffering, worsening infection, risk of amputation and death; avoidable healthcare costs.	
Avoid neglect or abuse.	Monitor carefully and strengthen social networks.	Risk of worsening physical or psychological health.	
Avoid delirium (sudden confusion or decreased alertness).	Closely monitor nutrition and manage chronic diseases (e.g., control blood sugar well).	Risk of injury and/or rapid deterioration resulting in hospitalization or death.	

Indicator	Value	Time trends & comparisons	Bottom line
Number of hospitalizations for falls per year per 100 seniors in the community	1.5*		**Falls are common. One in four long-stay home care clients has fallen in the past three months. Roughly one in 70 seniors in the community is hospitalized for a fall each year. Although there are no benchmarks for these measures yet, we believe there is room to improve.**
Percentage of home care clients who say they have fallen in the last 90 days	25%**		**Among long-stay home care clients, injuries are common; about one in eight have one every six months. A small but important proportion of clients develop pressure ulcers or show signs of abuse. There is likely room to improve in all these areas.**
Percentage of clients with a new pressure ulcer (stages 2 to 4)	1.4%**		**Please see our website at http://www.ohqc.ca/en/hc_landing.php for more information.**
Percentage of home care clients with unexplained injuries, burns or fractures	12%**		
Percentage of home care clients showing signs of neglect or abuse	1.2%**		

Data sources:
* DAD, FY 2008/09, provided by MOHLTC.
** RAI-HC, April to June 2008, calculated by CIHI. Under this system, every long-stay home care client is supposed to undergo a detailed assessment of their health at least once every six months by someone specially trained to collect this information.

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Root Cause of Quality Problems

Issue: Falls, injuries and abuse

The potential for a fall was not anticipated.

There are unidentified safety hazards in the home. Clients and family members are not aware of safety hazards that may be present in home.

Clients have difficulty moving around. This increases the chance of falls.

The client has poor vision.

A medical condition leads to frequent falls that cannot be prevented.

Medication is having side effects, such as confusion and dizziness.

Caregiver is burdened and uses unsuccessful coping strategies.

Client suffers from alcohol abuse or other addictions. Use of alcohol or other drugs can increase injury risk.

Ideas for Improvement

Conduct risk assessment for falls. A simple questionnaire can be given to assess factors such as medications, problems with mobility or vision, physical disabilities, dementia or other recent falls that predict the risk of future falls. This can help healthcare providers choose the best strategy for prevention.

Routine safety assessments. For clients who are frail and at high risk of falling, regularly assess the home for potential safety hazards and address them. Check for clutter, poor lighting, loose carpets, other tripping hazards, lack of handrails, dangerous appliances or electrical cords, or the hot water heater temperature set too high. Also discuss with family members, friends and other caregivers the importance of keeping the home free of hazards.

Introduce mobility aids. Clients should be fitted for aids such as canes, walkers and scooters. Trial equipment should also be available for clients to test before investing in an aid.

Encourage physiotherapy, exercise, rehabilitation or Tai Chi. Specific programs have been developed for seniors to strengthen muscle tone and improve balance.

Consider corrective glasses or cataract surgery.

Consider hip protectors for those at risk of frequent falls. **Keep the height of the bed low. Use non-slip footwear.**

Avoid certain medications. Avoid drugs on the "Beers" list and use safer substitutes. Have a medication review done to check for drug interactions (see section 4.4).

Refer these family caregivers for counselling that includes advice on coping and caring for family members.

Carefully screen for signs of abuse. Staff can be trained to look for signs or ask specific questions.

Address addictions. Clients should be encouraged to attend alcohol programs (e.g., Alcoholics Anonymous) or similar groups for other types of addictions.

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5.1 Patient experience in acute care hospital and emergency department care

In 2009, there were 5.4 million visits to emergency departments in Ontario and close to 1.1 million discharges from acute care beds. How these visitors feel about their experiences helps us identify strengths and things that need improving. This year's report examines patient experiences in hospitals and emergency departments.

What we want	Consequences if we don't get it	Whom does this matter to?
Patients have a positive experience during their hospital stay or emergency department visit. This involves treating patients with dignity and respect for the person and their time. Engaging with patients through active listening and clearly explaining the condition, implications and appropriate management are key components of a positive experience.	Lack of identification of weaknesses and areas for improvement in patient care mean little progress. Lack of understanding can impede recovery, including unnecessary emergency department visits or even death. Avoidance of hospital visits when needed can negatively affect timely provision of care and health outcomes.	All Ontarians who visit an emergency department or hospital.

Indicator	Value*	Time trends & comparisons	Bottom line
Would you recommend this hospital to your friends and family? —●— Hospital —●— ED	74% 57%		In FY 2008/09, three out of four hospital patients would recommend the hospital in which they received care. Only 57% of emergency department patients would recommend the emergency department they visited. There has been no change in the last five years, leaving major room for improvement.
Percentage of patients who felt they were treated with respect and dignity —●— Hospital —●— ED	82% 76%		Eight out of 10 patients felt they were treated with respect and dignity while they were either in the hospital or the emergency department. However, there has been no change in the last five years, leaving room for improvement.
Percentage of hospital patients who usually waited less than five minutes before getting the help they needed.	73%		Almost three out of 10 patients reported they waited at least five minutes for help after calling for assistance. There has been no change in the last five years and room for improvement.
Percentage of ED patients who said they waited too long to see a doctor	47%		Half of emergency department patients reported that they had waited too long to see a doctor. There has been no change in the last five years and there's room for improvement.
Do you think that the staff did everything they could to help control your pain? —●— Hospital —●— ED	50% 49%		Half of the patients discharged from either the hospital or emergency department thought the staff did everything they could to help control their pain. There has been no change in the last five years and there is lots of room for improvement.
Did you get all the medical information that you need? —●— Hospital —●— ED	51%† 44%†		When Ontarians who were hospitalized had questions to ask a doctor or nurse about their care and results of tests, only five out of 10 received information they could understand. Four out of 10 emergency department patients received information they could understand. There has been no change in the last five years and there is lots of room for improvement.

Data sources:
* NRC-Picker patient satisfaction surveys, FY 2008/09, calculated by OHQC. Values represent patients who responded yes to the indicated questions.
† In order to be considered as getting "all the medical information that you need," patients must have answered yes to all three questions indicated.
When you had important questions to ask a nurse, did you get answers you could understand? When you had important questions to ask a doctor, did you get answers you could understand? Did someone explain the results of the tests in a way that you could understand?

Root Cause of Quality Problems

Issue: Low rating of overall satisfaction in emergency department.

Patients are tired of waiting in the emergency department.

Issue: Low rating on pain control.

Pain is not adequately recognized.

The physician order for pain relief is delayed.

Physicians are afraid of drug-seeking behaviour or creating addiction among patients.

Issue: Patients do not get answers they can understand.

Patients may forget verbal explanations, especially if they are stressed from their illness.

Patients may have poor language skills, either because they are immigrants or have less education.

Providers may use medical terms that are not understandable.

Ideas for Improvement

Improve patient flow in the emergency department. Address ALC bed problem and wait times for LTC placement (see sections 2.1, 2.4 and 7.2 for more details).

Use visual analog scales. Monitor pain as if it were the "fifth vital sign."[209]

Consider techniques such as **patient-controlled anesthesia,** where the patient determines, within limits, how much pain relief he or she needs.[210]

Develop standard protocols for pain control for certain types of patients.

Have written information available in other languages, or written for a low level of literacy. Use symbols or drawings to explain instructions or concepts. Anticipate the most commonly asked questions and ensure that written materials cover these questions.

Use different media (e.g., patient videos) to explain complex information to patients.

Use the "teach-back" method to ensure that patients understand instructions.[211] Patients are asked to repeat back any key instructions given.

6.1 Primary care — access and effectiveness

A high-performing healthcare system should provide care based on what the person needs, not on the basis of a person's income, education level, age, sex or other factors. In the Equitable section this year, we look at how equity may be affecting access to primary care, proper monitoring of chronic disease, healthy behaviour, preventive measures and diseases that could be avoided with a population health focus.

What we want	Consequences if we don't get it	Whom does this matter to?
All Ontarians, regardless of their income, education level, age, sex, urban or rural residence, or whether they are immigrants or born in Canada, should not face barriers to access to care, but receive the same level of quality of healthcare services, feel engaged and empowered to maximize their own health and live long, productive lives.	People who are disadvantaged in society and who do not get the services they need or are engaging in unhealthy behaviours may find that their health will deteriorate further over time. This creates a vicious circle, as worsening health may put them at risk of lower income or employment and make them even more disadvantaged. This is not only bad for the individual, but also for family members and dependents. These people may need social assistance as their health deteriorates. Employers may also be affected because decreased health of their workforce means more sick time or staff turnover.[212]	All 13 million Ontarians.

Indicator	Comparisons				Bottom line
	Income	Education	Sex	Age	

Access to primary care: – Percentage of adults without a regular doctor*					In 2008, 6.8% of adults in Ontario were without a regular doctor. Those more likely not to have a family doctor were low income or male. Seniors were more likely to have a regular doctor than adults aged 18 to 64 years; this is reassuring as seniors have greater healthcare needs. There was no significant difference by education level and between urban and rural communities (data not shown).
Monitoring of chronic disease: – Percentage of patients with diabetes who, in the past 12 months, had an eye exam**					In 2008, 51% of patients with diabetes reported having an eye exam in the past 12 months, and 51% a foot exam. Those in the lowest income group were less likely to get these services. There were no differences by education level, age, sex or urban versus rural communities (data not shown).
– Percentage of patients with diabetes who, in the past 12 months had a foot exam**					
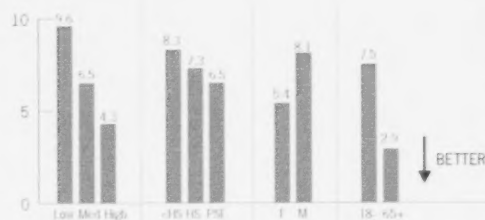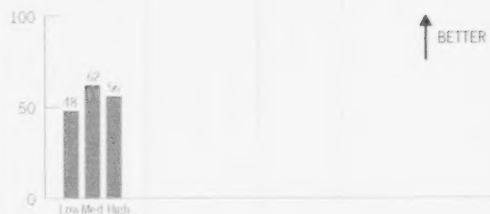
Legend: Low – 1st income quintile; med – 3rd income quintile; high – 5th income quintile. People are classified by income quintiles; the lowest income group is the 20% of the population that has the lowest income. HS = high school graduate. <HS = less than high school graduate. PSE = at least some post-secondary education. F = female; M = male.

6.2 Preventive measures

Indicator	Comparisons				Bottom line
	Income	Education	Age	Immigrant Status	

Percentage of women (aged 50 to 69) who reported having a mammogram in the last two years*

Income: Low 64, Med 77, High 75
Education: <HS 65, HS 75, PSE 76

↑ BETTER

Percentage of women (aged 25 to 69) who reported having a pap test in the last three years*

Income: Low 72, Med 82, High 88
Education: <HS 70, HS 82, PSE 83
Age: 25-39 81, 40-64 81, 65-69 66
Immigrant Status: Can Born 84, 10+ 77, 5-9 64, <5 65

↑ BETTER

Percentage of people (aged 50 to 74) who reported having an FOBT*

Income: Low 26, Med 32, High 32
Education: <HS 29, HS 33, PSE 31
Age: 50-64 29, 65+ 38

↑ BETTER

Bottom line

In 2008, 73% of eligible women had had a mammogram in the last two years, 80% of eligible women had had a pap test in the last three years, and 31% of eligible adults had had a fecal occult blood test (FOBT) in the last two years.

The lowest income group was less likely to get each of the three preventive services. Those with less than a high school education were less likely to get a mammogram or pap test, but there was no difference for the FOBT. Immigrants who arrived in Canada in the last 10 years were less likely than those born in Canada to have a pap test. (We did not have enough data to test this relationship for the other two indicators.)

Women aged 65 to 69 years were less likely to have a pap test. Those aged 50 to 64 years were less likely than seniors aged 65 to 74 to have an FOBT. In both cases, this age gap could be due to a mistaken belief that the test is not as important at that age. There were no differences in mammography use by age (data not shown).

For all three indicators, there were no differences between urban and rural residents, and for the one indicator affecting both sexes (FOBT) there was no difference by sex (data not shown).
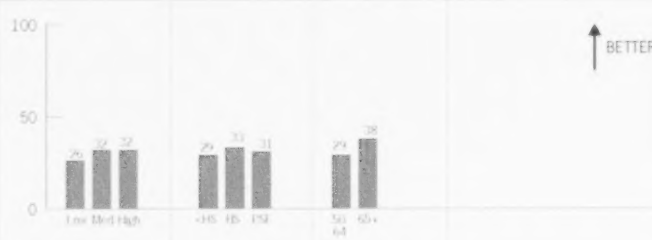
SUMMARY
Overall, low income and low education are the two most important factors to consider when targeting prevention programs towards those most disadvantaged. For pap tests, targeting more recent immigrants is also important.

Legend:
Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile. HS = high school graduate; < HS = less than high school graduate; PSE = at least some post-secondary education. Can Born = Canadian-born; <5 = immigrant less than 5 years in Canada; 5-9 = immigrant in Canada for 5 to 9 years; 10+ = immigrant in Canada for ten years or more.

Data source:
* CCHS, 2008, calculated by ICES.

6.3 Diseases that could be avoided with a population health focus

Indicator	Comparisons					Bottom line
	Income	Sex	Location	Age	Immigrant Status	

AMI incidence per 100,000*
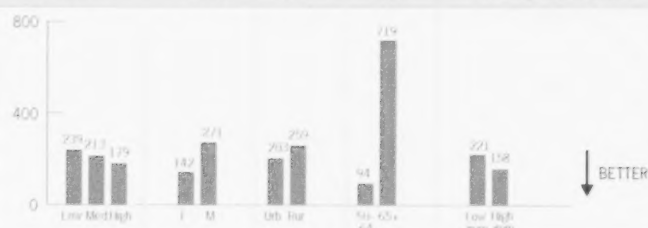
In 2008/09, there were 203 new heart attacks, 89 emergency department visits for intentional self-harm, 8,440 emergency department visits for injuries and 354 hospitalizations for injuries, per 100,000 people.

The chance of experiencing any of these events decreases steadily as income[†] rises. The gap in outcomes between high and low income is biggest for intentional self-harm.

Rate of emergency department visits for intentional self-harm per 100,000**

Adolescents were more likely to have an emergency department visit for an injury, but the elderly were more likely to be hospitalized for an injury.

Males were at greater risk of having a heart attack or an injury, but females were at greater risk of intentional self-harm.

Rate of injury-related emergency department visits per capita*
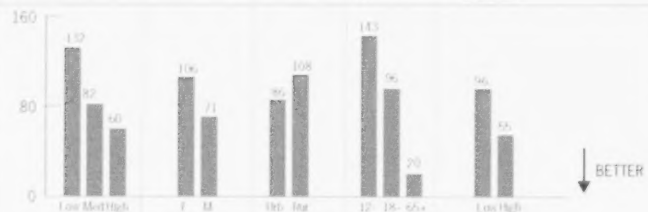
On all four measures, rural residents were at greater risk of worse outcomes. People living in areas with a high immigrant population[††] were less likely to have worse outcomes.

SUMMARY
If health professionals wish to direct their efforts towards those with the biggest health disparities, they should target the following:

Rate of injury-related hospitalizations per capita*

- AMI (heart attack) incidence — rural, low-income, born in Canada
- Intentional self-harm — adolescent, low income, rural, female, born in Canada
- Emergency department visits for injuries — rural, adolescent, male, born in Canada, low income
- Hospitalization for injuries — elderly, rural, low income, born in Canada
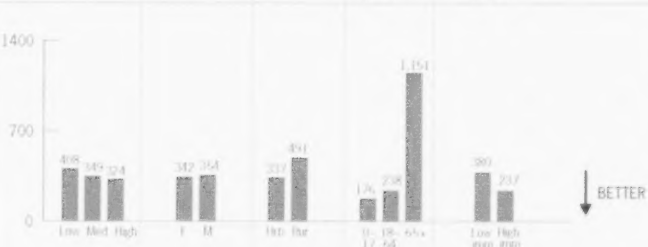
Legend:
Low – 1st income quintile; med – 3rd income quintile; high =5th income quintile. F = female; M = male. Urb=urban; Rur=rural. Low imm = low immigrant population area.
High imm = high immigrant population area.
† For these indicators, income is not measured directly but inferred from the average income in one's immediate neighbourhood corresponding to the postal code.
†† A high immigrant population area was defined as one where the neighbourhood, or census dissemination area surrounding one's postal code had more than 50% of immigrants, as reported to Census Canada.

Data source:
* Discharge Abstract Database, National Ambulatory Care Reporting System (NACRS), and Registered Persons Database (RPDB): FY 2008/09, calculated by Institute for Clinical Evaluative Sciences (ICES).
**NACRS, RPDB, FY 2008/09, calculated by ICES.
Due to data limitations, it was not possible to measure education differences at the same time as income for this set of indicators.

6.4 Healthy behaviour

Indicator	Comparisons						Bottom line
	Income	Education	Sex	Location	Age	Immigrant Status	

Percentage of the population who smoke daily*

Income: Low 21, Med 16, High 9.8 — Education: <HS 31, HS 22, PSE 13 — Sex: F 11, M 18 — Location: Urb 15, Rur 18 — Age: 12-17 2.6, 18-64 19, 65+ 7.3 — Immigrant Status: Can Born 18, 10+ 11, 5-9 8.1. BETTER ↓

Percentage of the population who are obese*

Income: Low 18, Med 17, High 13 — Education: <HS 22, HS 20, PSE 16 — Sex: F 16, M 19 — Location: Urb 17, Rur 22 — Age: 20-64 18, 65+ 18 — Immigrant Status: Can Born 20, 10+ 15, 5-9 8.4. BETTER ↓

Percentage of the population who are physically inactive*

Income: Low 58, Med 51, High 37 — Education: <HS 61, HS 56, PSE 51 — Sex: F 55, M 45 — Location: Urb 51, Rur 46 — Age: 12-17 29, 18-64 52, 65+ 58 — Immigrant Status: Can Born 47, 10+ 56, 5-9 58, <5 65. BETTER ↓

Percentage of the population with inadequate fruit and vegetable intake*

Income: Low 64, Med 60, High 51 — Education: <HS 66, HS 64, PSE 56 — Sex: F 53, M 65 — Location: Urb 59, Rur 57 — Age: 12-17 56, 18-64 61, 65+ 52 — Immigrant Status: Can Born 60, 10+ 60, 5-9 56, <5 66. BETTER ↓

Percentage of the population who are heavy drinkers*

Income: Low 17, Med 20, High 26 — Education: <HS 22, HS 18, PSE 16 — Sex: F 13, M 28 — Location: Urb 20, Rur 24 — Age: 12-17 13, 18-64 24, 65+ 6 — Immigrant Status: Can Born 23, 10+ 14, 5-9 12. BETTER ↓

Bottom line

In 2008, 15.5% of Ontarians smoked daily, 17.6% were obese, 50% were physically inactive, 39% had inadequate fruit and vegetable intake and 21% were heavy drinkers.

Lower-income people were more likely to smoke, be physically inactive and have inadequate fruit and vegetable intake. There was no difference between those in low and medium income brackets in obesity, but high income individuals were less likely to be obese. High income individuals were more likely to drink heavily.

Having less than a high school education and rural residence were associated with worse results for all five behaviours.

Smoking and heavy drinking are most common in adult years (aged 18 to 64), but physical inactivity increases with age. There was no difference by age for fruit and vegetable intake or obesity.

Men were more likely to smoke, be obese, have low fruit and vegetable intake and be heavy drinkers, but less likely to be physically inactive.

Immigrants were less likely to smoke, be heavy drinkers and be obese, but more likely to be physically inactive. There was no difference for fruit and vegetable intake. There were also no significant differences among immigrants in these health behaviours based on how long they have been in Canada.

SUMMARY:
If health professionals wish to direct their health promotion efforts towards those groups most likely to have unhealthy behaviours, they should target the following (based on the data below):

• Smoking — less than high school, low income, aged 18-64 years, male, rural, born in Canada

• Obesity — less than high school, rural, male, low to medium income, born in Canada

• Physical inactivity — less than high school, low income, immigrant, female, urban. Seniors are most likely to be inactive, but it is also important to target physical inactivity at earlier ages to maximize the benefits of exercise over one's lifetime.

• Heavy drinking — male, high income, rural, age 18-64 years, born in Canada, less than high school

Legend: Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile. HS = high school graduate; < HS = less than high school graduate; PSE =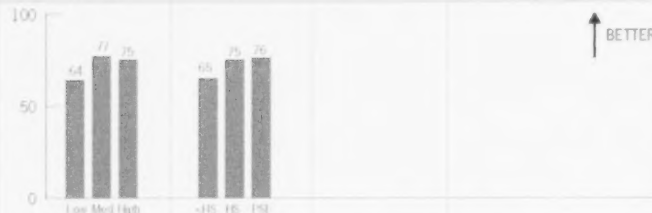 at least some post-secondary education. F= female; M= male. Urb = urban; Rur=rural. Can Born = Canadian-born. <5 = immigrant less than 5 years in Canada; 5-9 = immigrant in Canada for 5 to 9 years; 10+ = immigrant in Canada for ten years or more.

Data sources:
* Canadian Community Health Survey, 2008, calculated by Institute for Clinical Evaluative Sciences.
** Data not available for this category because of small sample size.

Root Cause of Quality Problems

Out-of-pocket costs. Low income people may not have a family doctor if they cannot afford transportation. They may not be able to afford exercise clubs or sports activities to stay fit.

Health priorities are ranked lower than other priorities. Low income people may have more immediate priorities related to day-to-day survival — including finding shelter, feeding their children or escaping abusive situations — that overshadow health concerns.

Stress. Low income people may cope with being poor through unhealthy but pleasurable behaviour such as smoking.[213] Stress can also make it difficult to quit smoking.[214] Studies have demonstrated significant increases in rates of chronic stress in low income groups.[215]

It's considered normal behaviour. Many low income neighbourhoods have high smoking rates.[216] Children growing up in a neighbourhood with a lot of smokers are more likely to smoke themselves because so many other people do.[217] In the same way, children in neighbourhoods where no one gets much exercise are likely to be inactive.

People lack knowledge. People with less education may not be aware of the importance of health screening.

Rural work and lifestyle issues. Farming[218] and rural recreational activities such as all-terrain vehicles[219] have high injury rates.

Cultural barriers. Immigrants from certain cultures may be uncomfortable with pap tests, especially if done by male physicians.

Ideas for Improvement

Make participation in outreach programs convenient. Leading-edge programs around the world bring health promotion activities deep into the communities being served — at community centres, malls, barber shops[220] and wherever else people naturally congregate.

Consider non-health services needed to improve access. For example, if people cannot attend health promotion activities or primary care visits because they do not have child care, consider how this could be offered. Consider arranging transportation for those for whom this is a barrier.

Create healthy communities in disadvantaged neighbourhoods. This includes improved public safety so people feel safe partaking in outdoor activities, such as using walking trails or joining exercise groups.

Promote low-cost alternatives. Low income people eat fewer fruits and vegetables. (See section 10.1 for a list of low-cost healthy foods.)

Encourage sports programs,[221] which improve physical activity, reduce obesity, improve social networks, and develop interpersonal and coping skills through teamwork.

Simplify and tailor learning materials. Ensure materials use graphics for those with low literacy, or are written in simple English or local slang, or in the languages that disadvantaged communities speak most often. Keep instructions simple and step-by-step.

7.1 Cost per service delivered

Hospitals should operate efficiently so that they provide the best patient care at the lowest cost. Being efficient also means managing finances well to avoid deficits or situations where there is not enough cash or short-term assets to pay the bills.

What we want	Consequences if we don't get it	Whom does this matter to?
Hospitals do not run a deficit.	Taxpayer dollars go to the bank to pay interest charges. Hospitals have difficulty purchasing necessary equipment or maintaining services for patients.	All Ontarians who pay taxes and want reassurance that their tax dollars are being managed wisely.
Hospitals are able to pay their short-term debt and bills with their short-term assets (cash, inventory, receivables).	Hospitals are forced to borrow to pay bills. Again, taxpayer dollars go to the bank to pay interest.	
Costs for treating in-patients in hospitals as low as possible without compromising high-quality patient care.	Hospitals that have high costs to treat the same type of patients compared to a similar hospital may be using resources inappropriately.	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of hospitals running a deficit —●— Province —●— Small community —●— Large community —●— Teaching —●— Chronic/rehabilitation	 41% 35% 58% 21% 18%		More than 40% of Ontario's hospitals reported a deficit in 2008/09. One in every two community hospitals is in deficit. This has become a lot worse over the last three years.
Current ratio (ability to pay bills without having to borrow) —●— Province —●— Small community —●— Large community —●— Teaching —●— Chronic/rehabilitation	 0.85 1.80 0.73 0.78 1.20		The province-wide average current ratio was 0.85 in 2008/09, which misses the target of between one and two. This suggests that Ontario hospitals, on average, did not have sufficient short-term funds to pay their short-term bills without having to borrow. Academic and large community hospitals have had this problem for the last five years.
Cost per weighted case in hospitals —●— Small community —●— Large community —●— Teaching —●— Chronic/rehabilitation	 $5,042 $5,177 $6,529 $4,969		The actual cost for a hospital stay has increased slightly more than inflation in the last five years. Academic hospitals, however, reported a slower increase in cost over the past three years.
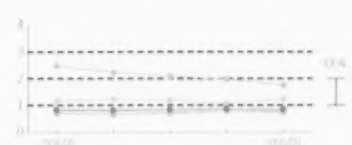
It's vitally important that, in the face of growing deficits, hospitals not only think of cutting services needed by the population to balance budgets, but also identify areas of waste in their system.

Root Cause of Quality Problems

Demand for services is increasing beyond what the hospital can currently provide with its budget. This could be from population growth and aging, or it could be from demand on hospitals that could be avoided (e.g., readmissions).

Hospital beds or services may be used inappropriately.

Avoidable complications of hospital care waste precious resources. Hospital-acquired infections and other complications that develop while in hospital increase length of stay and overall costs.

Inefficient processes within the hospital waste time and resources.

Ideas for Improvement

Work to reduce inappropriate or avoidable demand on hospitals. At a system level, improve access to primary care (see section 2.2) and chronic disease management in the community (see section 3.2).

Reduce readmissions to hospital (see section 3.3), by making sure patients leave the hospital on all the right medications (see section 3.1) and armed with all the information they need to function at home (see section 9.1). Consider specialized out-patient clinics (e.g., for congestive heart failure) or similar services that have been shown to reduce readmissions (see section 3.3).

Address the ALC bed issue, where beds are occupied by people who do not need them (see sections 7.2 and 2.4).

Consider utilization management software. This tool can help guide decisions on when it is safe to discharge patients.

Eliminate unnecessary tests or procedures, such as repeat tests or pre-operative tests for minor procedures (see section 7.3). Consider use of appropriateness criteria for CT or MRI scans (see section 2.3). Consider use of appropriateness criteria for procedures such as hip and knee replacements or cataract surgery.

Work on areas where there is a strong business case for quality.[202] A business case is where investments in improving quality are more than offset by reductions in cost for the same organization within a reasonable period of time. Business cases are well established for areas such as ventilator-associated pneumonia[203] and pressure ulcer prevention.[204] In private industry, there are many examples of strong business cases for workplace injury prevention.[205]

Search for and eliminate examples of wasted staff time. This includes the time of doctors, nurses and other healthcare staff. Time-wasting activities can include redundant documentation, unnecessary repeat tests or pre-operative tests for minor procedures.
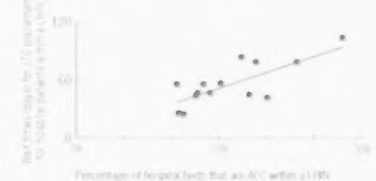
Improve efficiency of discharge processes. Use other well-established best practices for faster discharge, such as setting target discharge dates, staggering discharge times during the day, and having a "whiteboard" in the patient's room so that communication about discharge plans are always visible and the family can be ready for discharge.

7.2 Right service in the right place

Our healthcare system should avoid caring for individuals in places that are more expensive than others and where the alternatives provide as good if not better care. The most pressing example is the Alternate Level of Care (ALC) patient in acute care hospitals.[226] These patients often enter the hospital with an acute problem needing a lot of services and then recover, but still need some ongoing nursing care or help getting around. The doctor may not send the patient home if he or she is not satisfied that the patient will get enough home care to live safely at home. The patient may then be referred to long-term care (LTC), but would have to wait in the hospital until a bed is available, often for weeks or months (see section 2.4).

What we want	Consequences if we don't get it	Whom does this matter to?
Patients who no longer need hospital services should not have to stay there waiting to be discharged because they have nowhere to go.	It costs more to care for an ALC patient in hospital than in LTC. LTC staff are specially trained to care for frail individuals who need a lot of support services, so the quality of care likely would be better in LTC. Also, when beds are not available because they are occupied by ALC patients, people can't be moved from the emergency department to a hospital bed, leading to long wait times. Also, elective surgeries could be delayed.	The 2,800 hospital patients who, on any given day, are designated as ALC patients.[227]
People admitted to an LTC home should truly need to be there — we should not send people to LTC whose needs could have been met through alternatives such as home care or supportive housing.	Healthcare resources are wasted when cheaper alternatives of the same quality are available.	The 170,000[228] long-stay home care clients who may need more care in the near future.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of acute care bed days that are designated as ALC	16%*		One-sixth of hospital beds in Ontario are filled with patients who should be cared for somewhere else. This problem has become a lot worse in the last three years. Ontario is tied with Newfoundland and Labrador for having the highest proportion of admissions that were ALC-related.
Percentage of hospitalizations that were ALC-related in Ontario	7%**		
Relationship between ALC bed days and LTC wait times			There is a strong relationship† between LTC wait times for hospital patients and ALC bed days. Every increase of 3.3 days in the average wait for an LTC bed for hospital patients within a LHIN is associated with a 1% increase in the average percentage of hospital beds that are ALC within the LHIN.
Percentage of clients placed into an LTC home with high or very high MAPLe†† scores (i.e., appropriately)[229]	76%***		Most people placed into LTC have very heavy needs that require them to be in that type of setting; however, one in four people placed in LTC have relatively lighter needs, so alternatives might be possible if they were available. While there are no clear targets for this indicator at this time, we believe there probably is room for improvement.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

People's care needs are inadequately assessed. Some people may be placed in LTC who do not need that level of care and may be more appropriately cared for in the home (i.e., home care).

Some hospital patients are prematurely labelled as needing LTC, before they have had a chance to recover.

We don't have enough capacity for home care or alternatives to LTC.

Ideas for Improvement

Identify early those at risk of being hospitalized. There may be opportunities to identify frail individuals living in the community with unmet needs who are at high risk of being admitted to hospital and subsequently becoming LTC patients. Identifying these patients early and providing them with adequate home care support may help to slow down the decline in their health and may make it easier for them to go back home should they ever need to be hospitalized. One program in the Mississauga Halton LHIN aims to ensure that every person aged 75 and over who comes to an emergency department has a home care assessment.[230]

Use objective criteria to help determine who truly needs LTC. This means carefully screening individuals' healthcare needs to ensure that only those with heavy needs actually get on the wait list. This may help to address situations where people who fear long waits get themselves on the list "just in case." There are now objective tools (e.g., the MAPLe score[230]) that can help care planners decide whether an individual's needs are heavy enough that they should be put on the list.

Avoid early labelling of people as needing LTC. When people go to hospital with a sudden worsening of their condition, they may be told they need to go to LTC. Once that happens, they may sell the house and set off a chain of irreversible events. Then, if the patient recovers better than expected, they will still need to go to LTC. Physicians are the ones who typically give the indication that LTC is needed. To implement this strategy of labelling only when necessary, it is important to get all physicians who work in the emergency department or who look after hospital patients to agree to this strategy and defer to home care to make decisions about the need for LTC. For example, the Mississauga Halton LHIN implemented the Home First program to reduce the number of ALC patients and transition patients from acute care back to their homes.[233,234]

Ensure there are sufficient alternatives to LTC homes. This includes assisted living homes or supportive housing,[235] where frail individuals can access some degree of ongoing care if their needs are less than what an LTC home would provide. Retirement homes now provide some of these services in Ontario, but are available only for those who can afford these types of arrangements. Although rent subsidies are available to eligible seniors, the criteria are stringent and wait lists for subsidized units can be long.[236] Furthermore, although these homes may be accredited by the Ontario Retirement Communities Association,[237] they do not fall under the jurisdiction of MOHLTC. In contrast, Alberta has developed a Continuing Care System that includes supportive housing in its strategy.[238,239] Last year, the OHQC reported on the region around Lethbridge, Alberta, that uses this strategy and is able to keep its wait lists at only 29 days despite using one-third fewer LTC beds compared to Ontario.[240]

Consider increases in home care availability. In the past, there have been caps on hours of care for home care clients; these have recently been lifted. This change may allow some clients to avoid being put on a wait list for LTC. However, for people with heavier needs, other options such as assisted living (see above) may be more cost-effective than home care.

What is Ontario doing?

- In August 2007, the Ontario government launched the Aging at Home Strategy, a $1.1 billion initiative over four years aimed at supporting seniors to continue living at home. The strategy includes extra funding for services such as home care, assistive devices, assisted living and palliative care. It also funds innovation projects, such as those that use non-traditional providers or offer new preventive or wellness services. Examples include day programs for seniors, social/recreation programs, and falls prevention programs.

7.3 Avoiding unnecessary drugs and tests

There are many instances in healthcare where something we do adds no value and should be stopped or we can substitute a cheaper alternative that is just as good. We explore two examples here — unnecessary pre-operative testing for cataract surgery and using thiazides for high blood pressure.

What we want	Consequences if we don't get it	Whom does this matter to?
No unnecessary ECGs and chest X-rays before cataract surgery — several studies show neither improves patient safety.[241][242]	We waste money and time.[243] We expose people to unnecessary radiation from chest X-rays.	The 130,000 Ontarians who get cataract surgery each year.[244]
Use of the lowest-cost drugs if they are just as effective as newer, more expensive ones; in particular, use thiazides (a type of diuretic or "water pill") as the first choice for uncomplicated high blood pressure.[245]	We waste money.	The more than 23,000 seniors who were diagnosed with uncomplicated hypertension in Ontario last year.[245]

Indicator	Value	Time trends & comparisons	Bottom line
Rate of pre-operative ECG testing per 100 cataract surgeries	35*		About one in three patients who has cataract surgery has an ECG. About one in 25 has a chest X-ray. Thankfully, we have reduced the use of these wasteful tests in the last six years. There is still room to improve, however.
Rate of pre-operative chest X-ray testing per 100 cataract surgeries	4.1*		
Percentage of elderly patients with uncomplicated hypertension treated with diuretics as a first-line treatment	31%**		Only one in three patients starts treatment for high blood pressure with a drug that is low cost but equally effective. Instead, doctors are using more expensive drugs for no good reason. This problem is getting worse over time. We could do a lot better.

Root Cause of Quality Problems

Doctors are unaware of or forget to follow, current best practice guidelines.[247]

Doctors are unaware that they are not following guidelines as closely as they thought they were.

Healthcare providers are influenced by sales representatives from drug companies. Healthcare providers may lack time to critically appraise the literature regarding more expensive alternatives and defer to information provided by sales representatives from drug companies. Often, marketing campaigns promote more expensive drugs that offer no greater benefit over older, less expensive drugs.

Ideas for Improvement

Routine pre-operative orders can remind physicians that chest X-rays and ECGs are not recommended for routine minor surgery.

Decision support features in electronic medical records (EMRs) can help remind family physicians of the drugs that are recommended in certain situations.

Regularly measure compliance with protocols and report on performance. Regularly monitor compliance with guidelines and report results to hospitals and individual healthcare providers to give them an idea of how they are performing and to help them identify areas for improvement.

Academic detailing. This program involves pharmacist visits to family physician offices to promote evidence-based drug prescribing practices based on objective appraisal of the literature.[248, 249, 250]

8.1 Overall spending and value for money

Adequate financial resources are essential for running a large, complex system such as healthcare. One way to measure investment in healthcare is to see what percentage health takes of the total wealth of the province. This is measured as a percentage of the gross provincial product, the total of all the goods and services Ontario produces. It is difficult to know the right or best level of healthcare spending. Higher levels might be more justifiable if Ontarians were assured they were buying better quality healthcare. However, the decision to spend more must be weighed against how much wealth is available (a particular concern in the current economic downturn). Other considerations are the alternative uses of taxpayer money for education, social services, income support or better roads.

What we want	Consequences if we don't get it	Whom does this matter to?
High-quality healthcare services for the amount of money spent.	Money spent that could have been used for many other purposes to benefit society.	The 13 million residents of Ontario.

Indicator	Value	Time trends & comparisons	Bottom line
Total healthcare spending as a percentage of gross domestic product[1] —●— Ontario —●— Canada	12.7%* 11.9%		In 2009, Ontario spent 12.7% of its total wealth on healthcare, up from 8.8% in 2000. Ontario used to spend less of its GDP on healthcare compared to Canada as a whole; now it spends more. Recent increases in this percentage are because the economy and GDP are shrinking due to the economic downturn, but healthcare costs continue to rise. This challenges the sustainability of the healthcare system.
			In 2007, among Organisation for Economic Co-operation and Development (OECD) countries, Canada ranked sixth in total healthcare spending as a percentage of gross domestic product (GDP).** After adjusting for differences in calculation (OECD uses a formula that makes the GDP percentage 0.4% lower), Ontario appears to spend more of its GDP on healthcare than most nations except the US, France and Switzerland.
Total healthcare expenditures in province	$72.2 billion*		Healthcare spending in Ontario was projected to be $72.2 billion in 2009.* Expenditures have increased by 85% since 2000. Ontario's expenditure growth rate is approximately equal to that for all of Canada (86%).
Total healthcare expenditures per person	$5,530*		In 2009, Ontario spent $5,530 per person on healthcare per year.* Healthcare costs per capita have increased by 65% since 2000 — that's an average of 5.8% per year, compared to the average yearly inflation rate of 2.3%.[251] However, the rate of growth in spending per person has been slower in Ontario than in all other provinces, except British Columbia.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Expenditures versus value for money

Ontario is now spending considerably more on healthcare than many other industrialized countries. What extra value is Ontario getting for its added investment? The following table compares Ontario against six countries that spend less in a sample of key indicators. Despite spending a lot more on health care, Ontario generally scores worse than many other countries on the quality indicators described above. Researchers[252] analyzing Canada's performance against European countries across a much more detailed list of indicators observed that the quality of treatment in Canada was on par with most European countries but that wait times and patients' rights were worse, and concluded that Canada had a last-place ranking amongst 32 nations for its "Bang-for-the-Buck" index.

Indicator	Ontario	UK	Netherlands	Norway	Sweden	Australia	New Zealand
Percentage spent of GDP, 2007	10.6%[†]	8.4%	9.8%	8.9%	9.1%	8.7%	9.2%
Percentage of family doctors using electronic medical records, 2009*	43%	96%	99%	97%	94%	95%	97%
Percentage of sicker adults able to see their family doctor the same or next day, 2008**	38%	61%	79%	N/A	N/A	53%	71%
Percentage of sicker adults able to see a specialist within four weeks, 2008**	43%	44%	73%	N/A	N/A	46%	50%
Percentage of sicker adults who rate the overall quality of medical care they received in the past 12 months as excellent or very good, 2008**	61%	62%	37%	N/A	N/A	61%	66%
Mammography screening rates, 2008***	73%	75%	85%	98%	84%	N/A	N/A
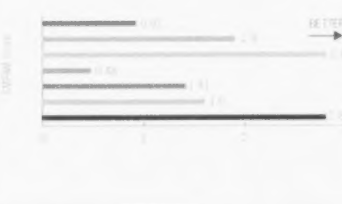
8.2 Information technology

Information technology (IT) is an essential tool to help the healthcare system deliver the best quality of care. The Ontario government has promised "an electronic health record by 2015," and created the eHealth Agency in 2008 to implement it. It's important that future IT systems are designed to allow information sharing and to support clinical decision-making.

What we want	Consequences if we don't get it	Whom does this matter to?
A system that enters and stores notes and orders electronically.	Errors because of illegible handwriting or transcription mistakes. Wasted time looking for information that is missing or misfiled.	All Ontarians and healthcare professionals.
An IT system that checks for errors and reminds people when follow-ups or treatments should be given.	Dose miscalculations, drug interactions or allergies not flagged. Possibility healthcare providers may forget to schedule follow-up tests or visits or prescribe the right drugs for certain conditions.	
A person's medical history and data (e.g., test results) shared among providers with the information kept secure.	Tests repeated needlessly because results cannot be accessed. Wrong treatments given because most up-to-date information not available. Wasted time from repeated data entry. Hindered teamwork and communication among healthcare providers.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of budget spent on information systems, in: — Hospitals — CCACs — Children's treatment centres — Mental health and addiction centres	3.4%* 2.5% 2.0% 0.8%		Spending on IT has gradually increased in several healthcare sectors. Hospitals spend the most on IT. However, we still spend far less than the banking industry (7%).[253, 254]
Electronic Medical Record Adoption Model™ (EMRAM) score[‡] (from Stage 0 to 7), measuring how far hospitals have progressed in adopting IT: ■ Small community hospitals ■ Large community hospitals ■ Teaching hospitals ■ Specialty hospitals[‡‡] ■ Ontario ■ Rest of Canada ■ US	 0.92** 1.9 2.8 0.48 1.41 1.6 2.8		Ontario's hospitals have made some progress in adopting IT, but we still have far to go. We lag behind the US, and small hospitals lag behind larger hospitals.
Percentage of hospitals that use IT applications to: ■ Send electronic referrals ■ Store electronic patient records ■ Do computerized practitioner order entry ■ Store and retrieve digital images	 9%** 49% 8% 83%		Less than one in 10 Ontario hospitals can send electronic referrals or have a computerized entry system for orders. Only 50% have electronic patient records. There is major room to improve. On the positive side, hospitals have made major improvements in use of digital imaging systems that allow x-rays and other images to be transmitted electronically.
Percentage of family physicians who use electronic medical records (EMRs)	43%***		The percentage of family doctors with EMRs rose from 26% in 2007[255] to 43% in 2009, thanks to funding and support from the Ontario MD program.[256] We're still behind Alberta and British Columbia (49%), as well as Australia, New Zealand, UK, Norway and Netherlands (95 to 99%).
Percentage of family physicians who: ■ Receive a reminder for guideline-based intervention and/or screening tests ■ Prescribe drugs electronically ■ Use flags for possible drug errors	 16%*** 33% 28%		Ontario doctors with EMRs are not using all the tools to improve quality, such as electronic reminders for follow-ups or checks for drug errors. In Australia, nearly all doctors use these tools.[257]

Root Cause of Quality Problems

Cost, for hardware, software licences, training, maintenance and upgrades.

Concern about lost productivity during transition to EMR.[258, 259] Some physicians report that it takes months or years to fully implement an EMR. Physicians may feel there is no incentive to absorb the cost and hassle.

Fear of problems, such as system crashes, data loss or security breaches.

Uncertainty over which software will prevail. Physicians may suspect that some vendors will be out of business in the future and defer implementation until it is clear who the market leader is.

True benefits will be realized only when other parts of the system are built. If other sites, such as lab or X-ray, cannot send data electronically, then staff may have to scan information into the EMR, which is extremely inefficient.

Some physicians can't type well.

Ideas for Improvement

Other jurisdictions have created **incentive programs** to either subsidize physicians' EMR costs or provide bonuses for delivering higher quality care.[260] An EMR that helps monitor quality then has a business case for investment.

Identify **physician champions** or leaders.[261] Such individuals who have experience with EMRs can reassure others that there are standard protocols to protect against computer problems (e.g., back-up systems, firewalls, etc.) or provide tips on how to implement an EMR more smoothly.

Promote **common standards** for data exchange at a provincial or national level, so that even if a software company becomes defunct, key data could still be transferred to another system.

Continue investments in disease registries, lab information systems, electronic prescribing systems and picture archiving and communications systems (PACS) for diagnostic imaging, as many other countries and provinces such as Alberta have done.[262, 263]

Consider tablet-based systems that have **handwriting recognition** capabilities.

What is Ontario doing?

- The EMR Adoption program, funded by eHealth Ontario and managed by OntarioMD was announced in October 2009. It aims to bring the number of physicians with EMRs to 9,000 by 2012.[267]

- Work on an online diabetes registry is underway. The registry will track how well diabetes is being controlled and whether patients are getting the drugs, tests and follow-up they need.[265]

- The ePrescribing program began in 2008 and presently allows healthcare providers to transmit prescriptions electronically to pharmacists, thereby avoiding handwriting errors.[264]

- In July 2009, all hospitals in Ontario were able to share filmless images (e.g., X-ray, CT, MRI) through the diagnostic imaging/picture archiving and communications system(DI/PACS).[266]

- CCACs now use a client care information system that allows all service providers to access and share information on intake and referrals, assessments, services and client characteristics.

- In 2009, the ER-CCAC Notification System was expanded to high-volume emergency departments.[268] This web-based notification system reduces rates of readmission by identifying existing and new CCAC clients who would be better served in the community, therefore avoiding emergency department visits.[269]

- Since 2007, the Drug Profile Viewer (DPV) system has been used in the emergency departments, in-patient areas, admitting areas, pharmacies and clinics of 245 hospitals to secure access to the drug claim histories of the 2.3 million recipients of the Ontario Drug Benefit Program.[270]

8.3 Healthy work environment

Safe, well-run workplaces have fewer work-related injuries and workers who are satisfied with their jobs. A good workplace affects not only the health of staff, but also quality of care. Research shows that satisfied, healthy healthcare workers are more courteous and less likely to make mistakes due to fatigue or stress.

What we want	Consequences if we don't get it	Whom does this matter to?
Injury rates for healthcare workers as low as possible — through proper safety training, equipment (e.g., lifts for moving patients), inspections and organizational commitment to safety.	When workers are off work due to injury, both workload and stress increase for those who cover for injured workers. Workplace Safety and Insurance Board (WSIB) claims increase and premiums may rise. Injuries may create staff turnover, which disrupts continuity of care and adds to recruitment expenses. Organizations may also find it hard to attract new workers to an unhealthy workplace.	The 560,000 Ontarians working in health care and social services, who represent 9.8% of Ontario's entire workforce.[273]
Higher job satisfaction for healthcare providers — by reducing stress, keeping workload reasonable and enabling good teamwork and leadership.	Dissatisfied workers may leave their jobs, leading to the problems associated with turnover noted above. Dissatisfied workers may also have more absenteeism and provide lower quality of care or less courteous care if they are feeling stressed or overworked.	

Indicator	Value	Time trends & comparisons	Bottom line
Lost time and non-lost time injury rates per 100 full-time equivalent workers: —•— LTC homes —•— Hospitals[†] —•— Nursing services (home care and other settings)[††] —•— Treatment clinics[†††] —•— Professional offices and labs[††††]	 8.9* 4.9 5.5 3.3 2.3		There have been no major changes in injury rates over the last several years. Injuries are highest in LTC homes. Healthcare injury rates are higher than in other industries, such as construction and mining.[274] Ontario's healthcare workers exhibit a lower injury rate than healthcare workers in British Columbia,[275] although direct comparison is difficult due to varying definitions. We believe there is great room for improvement.
Percentage of physicians satisfied with practising medicine	76%**		Three-quarters of family doctors in Ontario are satisfied with practising medicine. Ontario and Canada are in the middle of the pack compared to other major countries. Three countries (Netherlands, New Zealand and Norway) have very high levels of satisfaction — almost 9 in 10 — even though doctors there work about as many hours a week as those in Ontario.[276]

Data sources:
* Workplace Safety and Insurance Board, 2008; this indicator represents the total number of injuries causing time away from work (lost time) or not (or the cost of the time off was picked up by the employer — non-lost time) per 100 LTC workers per year.
** CFS (2009): percentage of physicians reporting being satisfied when asked their "overall satisfaction with practising medicine."
† Includes acute care, rehabilitation, psychiatric, paediatric and other specialty hospitals.
†† Includes agencies that provide nursing, rehabilitation and personal support services (e.g., homemaking) for provincial home care programs; as well as hospitals or other organizations that need short-term staff to fill scheduling gaps. ††† Includes clinics for mental health and addiction, rehabilitation and public health, as well as CHCs.
†††† Includes offices of doctors, dentists, physiotherapists and other healthcare professionals; medical laboratories; radiology suites; and agencies for research; health promotion, worker safety or social service planning.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Lack of knowledge about safety. Staff (e.g., doctors, nurses and other healthcare providers) are not aware of safety hazards in the workplace or ways to avoid them.

Lack of "safety culture." Staff pay insufficient attention to safety, may ignore risks and are not motivated to change unsafe practices. Alternatively, staff may be experiencing fatigue, stress or burnout, which can also increase the risk of workplace accidents.

Lack of safety equipment. Staff do not have access to equipment that could reduce their risk of injury.

Ideas for Improvement

Educate staff about hazards to their own safety and provide training to reduce their risk. Educate staff to look out for safety hazards (e.g., clutter, poor lighting and slippery areas) and pay closer attention to safe lifting protocols, appropriate use of safety equipment and infection control.

Risk assessments. Have staff use standardized checklists to help them identify environmental hazards, repetitive motions that could lead to injury and faulty equipment.[277]

Prevent abuse towards staff.[278] Have security available, provide panic buttons for staff at high risk, use a buddy system and teach conflict de-escalation techniques to staff.

Promote general healthy lifestyles within the workplace.[279] Make it easier for staff to follow healthy lifestyle habits. Some activities could include stretch breaks in meetings, healthy food choices for meeting snacks, vending machines and cafeteria food, pedometer challenges, stair climbing challenges, bike to work campaigns and making bike lockers and/or showers available in workplace. Offer tobacco cessation programs and universal flu vaccination.

Visible leadership for workplace safety. Set targets with deadlines for reducing workplace injuries, and publicize these widely across the organization. Post frequently updated charts showing progress. CEOs and managers should "walk the shop floor" to talk about safety and listen to concerns. Monitor safety statistics, such as injury rates, at the board level.

Employee recognition. Provide prizes, certificates and thank you announcements to employees for innovative ideas related to safety or for their participation in safety activities that lead to reduced injuries or better health.

Purchase safety equipment. Musculoskeletal injuries from heavy lifting (e.g., while moving a patient out of bed) are very common in healthcare. Use mechanical lifts to assist with patient transfers. Needleless IV systems can help reduce needle stick injuries. Consider ergonomic workstations to reduce injuries related to repetitive strain.

What is Ontario doing?

- The Ontario Ministry of Health and Long-term Care has partnered with the Ministry of Labour and the Ontario Safety Association for Community & Healthcare to develop education sessions, risk assessment tools and DVDs to assist with the prevention of workplace violence.[280]
- In July 2010, the Needle Safety Regulation will be extended to community work environments. Under this regulation, employers are required to provide workers with a safety-engineered needle for work that requires the use of a hollow-bore needle.[281]
- HealthForceOntario is operating the Healthy Work Environment Innovation Fund, a grant program that provides funding for healthcare organizations interested in implementing a healthy work environment.[282]

8.4 Health human resources

Health human resources refers to the number and mix of people who work in healthcare. While having enough staff is the foundation for delivering good care, defining the right number and mix of staff has been an elusive goal for researchers and planners. In theory, one can set a desired target based on assumptions about the demand for healthcare, model of care used, how productively people work and the number of hours staff is willing to work, but this target would have to be constantly updated as new models emerge and as we find more efficient ways to structure the work. Because MOHLTC has not yet set any official planning targets for health human resources, we will not comment on whether increases in supplies of professionals are good or bad. We will, however, note whether the composition of the workforce seems to be moving us towards greater team-based care in family doctor practices, which is important to deliver high-quality, efficient care.

What we want	Consequences if we don't get it	Whom does this matter to?
Sufficient healthcare practitioners in the healthcare system.	Not enough people to provide necessary services; increased wait times or inability for patients to access services at all; extra workload and stress for those who are providing services.	All 13 million Ontarians.
Health professionals working in teams.	More efficient use of staff time; staff able to specialize in certain areas of practice; generally related to higher quality of care.	

Indicator	Value	Time trends & comparisons	Bottom line
Number of entry-level student positions for: —•— Registered practical nurses —•— Registered nurses —•— Nurse practitioners	3,928* 2,851 176		Ontario is graduating more health professionals than ever before. Increases have been largest over the past four years for nurse practitioners (76%), pharmacists (55%), midwives (50%) and registered practical nurses (34%).
—•— Undergraduate medical students —•— International medical graduates —•— Pharmacists —•— Midwives	876* 220 387 90		
Supply per 100,000 people, of: —•— Family doctors —•— Specialists —•— Nurse practitioners	86.8** 97.1** 8.6***		From 2002 to 2008, there has been an increase in the supply of family doctors (6.2%), specialists (8.6%) and nurse practitioners (82%). However, there is still only one nurse practitioner for every 10 family physicians in the province. We are far from being able to create teams where family doctors work routinely with nurse practitioners.
Supply per 100,000 people of French physicians	29ⁱ		The supply of French-speaking doctors has increased since 2003; 17% of doctors now speak French. Of note is that 4.8% of Ontario's population speaks French.[203]
Percentage of family doctors who routinely work with other healthcare providers in their practice	52%ⁱⁱ		Only half of family doctors routinely work with other healthcare providers in their practice. This rate is the second-lowest among major countries.[204] There is significant room for improvement.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Issue: Lack of teamwork in primary care

Doctors are not trained to work in teams with other healthcare providers. Working in a team setting involves different dynamics and requires management skills to achieve harmony.

Lack of awareness of roles that other healthcare professionals (e.g., dieticians) can play in reducing workload demands on physicians.

Shortage of staff available to hire. Nurse practitioners are still new in Ontario.

Not all doctors participate in funding models that allow them to hire other team members.

Ideas for Improvement

Provide training to primary care teams. Focus on effective teamwork, roles and responsibilities, how to manage conflict, how to design process flows in the office from one staff member to the next (e.g., the diabetes patient gets blood pressure and weight checked by the receptionist, then reviews diet and has a foot check with the nurse practitioner, then reviews medications with the doctor, then gets an updated list of medications from the pharmacist).

It may be necessary to wait until more of these professionals enter the system.

Continued support of existing initiatives, including the nurse practitioner program and others. Ontario has a number of alternate funding models[285, 286] that support team structures, such as FHTs and CHCs.

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9.1 Discharge/transitions

Transitions in healthcare occur when people move from one provider or setting to the next (e.g., from a hospital to the community). Patient safety experts believe that many errors occur during these transitions due to poor communication. It is important that all key information is transferred or shared in a timely fashion, and that necessary follow-up care is arranged.

What we want	Consequences if we don't get it	Whom does this matter to?
People discharged from a hospital or emergency department should get all the information they need (e.g., warning signs to watch for, side effects of new drugs, whom to call if they have problems) when they go home.	Return visits to the hospital or worsening health. People cannot follow discharge instructions if they have not been informed properly.	The 20% of Ontarians who visit an emergency department each year, and the Ontarians who account for over one million hospital discharges each year.
After discharge from a hospital or specialist visit, information should be sent to the family doctor or healthcare provider as soon as possible.	Confusion about drugs, diagnoses of diseases or treatments needed. This could lead to drug errors, missed treatments or wrong treatments being given.	The 36% of Ontarians who visit a specialist at least once each year.
After hospitalization for stroke, most patients should receive rehabilitation services.	Patients will not get therapy to reduce their disabilities in speech or movement.	The 3,700 new stroke victims in Ontario each year.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of patients who have all the information they need after discharge — Hospital — ED	26%* 24%*		Only one-quarter of patients discharged from hospital and patients leaving an emergency department get all the information they need after discharge. There have been minor improvements in the past five years, but there is still much room to improve.
Percentage of patients who knew: – danger signs to watch for	59% hospital 49% ED		
– purpose of meds	71% hospital		
– how to take meds	19% ED		
– side effects of meds to watch for	41% hospital 37% ED		
– when to resume usual activities	51% hospital		
– who to call if need help	81% hospital 60% ED		
Percentage of family doctors reporting prompt receipt of information from hospital after discharge	25%**		Both Ontario and Canada are worse than many other major countries at getting hospital discharge information promptly to family doctors.
Percentage of family doctors reporting prompt receipt of information from specialists	69%**		Only seven in 10 family doctors receive information promptly from specialists. Ontario and Canada are in the middle of the pack compared to other major countries.
Percentage of stroke patients discharged from acute care to in-patient rehabilitation	28%***		Too few stroke patients are getting in-patient rehabilitation — only 28%, while the target is 60%.[291] There has been no improvement in the past three years.

Root Cause of Quality Problems

Issue: Patients do not receive or understand
discharge instructions

Doctors or other healthcare providers forget to give all relevant details
about discharge care to patients.

Patients may be too stressed with their medical condition and forget
discharge instructions when given.

**Staff explain instructions at a level of language that patients
cannot understand or patients don't understand English well.**

Issue: Transfer to rehabilitation following stroke

Not enough spaces in rehabilitation facilities to accommodate
stroke patients.

Issue: Discharge information not received
by primary care

**Doctors don't dictate discharge summaries right away
after discharge.**

**Delays in getting information to the family doctor or healthcare
provider.** Hospitals may rely on snail mail to get reports out.

Ideas for Improvement

**Provide written discharge instructions for all hospital and emergency
department patients.** [20, 29] This can be done on a separate carbon copy
sheet, with one copy given to the patient and the other kept in the chart.
Alternatively, use a standard sheet for certain common conditions (e.g.,
gastroenteritis, head injury), with room to add details unique to the patient.
These forms not only address the problem of people forgetting instructions,
but they can also be structured in a way to remind the healthcare provider
to discuss all important issues (e.g., how to take medications, what
symptoms to look out for, whom to call if things get worse, what to
do at home and when to go for follow-up).

Use the "teach back" method. [9] Ask patients to repeat discharge
instructions to verify that they understand them. If they don't, clarify errors
and try again. Consider requiring staff to record in the chart whether the
"teach back" confirmed understanding of written discharge instructions.

Translation services. Have a roster of available translators for commonly
spoken languages in the community, or information in multiple languages.

Ensure the right capacity exists for stroke rehabilitation care.
Consider outpatient rehabilitation options as well.

Try database-generated discharge summaries, where much of the
key information is captured using a standard form instead of traditional
voice dictation. Studies show that they are faster than dictating summaries,
capture more useful information, and doctors or heathcare providers
receiving the reports find them easier to read. [28, 29]

**Track discharge dictation delays and feed data back to family
doctors or healthcare providers.**

Set standards in hospital for discharge summary dictation delays.
For physicians who habitually delay discharge summaries, revoke hospital
privileges as a last resort.

Use fax or secure e-mail instead of mail.

Ideally, **transmit this information electronically** from hospitals to
electronic medical records in family doctor offices.

10.1 Healthy behaviour

Healthy behaviour is the basis of good health. It is important to avoid smoking and heavy drinking, maintain good physical activity, avoid obesity and have a healthy diet with lots of fruits and vegetables. A healthy lifestyle is critical to avoid chronic diseases later in life.

What we want	Consequences if we don't get it	Whom does this matter to?
No smoking.	Tobacco use causes cancer, heart attacks, strokes, emphysema and other conditions[297] and kills over 13,000 Ontarians every year. Tobacco-related diseases cost Ontario $1.7 billion for healthcare each year, cause $4.3 billion in lost productivity each year and account for at least 500,000 hospital days each year.[298]	All 13 million Ontarians.
No obesity.	Obesity increases the risk of heart disease, stroke, diabetes, several kinds of cancer (including breast, colorectal, esophageal, pancreatic, endometrial and kidney),[299] arthritis of the knee and many other conditions.[300] Obesity costs Ontario $1.6 billion each year: $647 million in direct costs and $905 million in indirect costs.	
No physical inactivity.	Physical inactivity has been shown to lead to obesity, the worsening of heart disease or diabetes, the onset of osteoporosis[301] and cancer.[302]	
Everyone eating at least five servings of fruits and vegetables every day.	Eating fewer than five servings of fruits and vegetables per day increases the risk of heart disease and stroke, as well as stomach, esophageal, lung and colorectal cancer.[303]	
Avoid regular heavy alcohol consumption.	Regular heavy alcohol consumption increases the risk of cirrhosis of the liver, pancreatitis, chronic gastritis (irritation and bleeding of the stomach)[304] and cancer of the mouth, throat, esophagus, colorectum and breast.[305] It also leads to greater risk of injuries and violent behaviour.[306]	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of the population who smoke daily	16%		Ontario's smoking rates dropped from 2001 to 2005, but did not improve from 2005 to 2008. One in six Ontarians aged 12 and over still smokes. We are better than most provinces, but behind British Columbia.[307]
Percentage of the population who are heavy drinkers	21%		One in five Ontarians has a heavy drinking problem. This has not improved in the last five years. We are, however, better than most other provinces.
Percentage of the population who are obese	18%		From 2001 to 2005, we made important progress in reducing obesity and physical inactivity and improving our diet. However, from 2005 to 2008, we lost ground on these measures. Half of Ontarians are not getting enough exercise — short of the provincial target for physical activity of 55%.[308] We are better than most provinces, but behind British Columbia on all these measures.[309]
Percentage of the population who are physically inactive	50%		
Percentage of the population with inadequate fruit and vegetable intake	59%		

Data sources:
* CCHS, 2008, calculated by ICES

Root Cause of Quality Problems

Poverty or low education. These individuals typically exhibit more unhealthy behaviours (see chapter 6). They may be unaware of the health risks of their behaviour, or may have other concerns, such as having a secure place to live or avoiding abusive situations, that are more important than maintaining a healthy lifestyle.

Poor health habits are the neighbourhood norm.

Addiction to an unhealthy lifestyle — particularly addiction to nicotine.

Motivation issues. Individuals may not be motivated to change their lifestyle choices, or may ignore advice for behavioural change.

Healthcare providers forget to discuss healthy behaviours.

Providers don't have time to discuss healthy behaviours. Providers — particularly doctors — may not have time to deliver health promotion advice or treatments, such as counselling on smoking cessation, during their primary care visits.

What is Ontario doing?

- People who wish to learn about healthy eating and how it helps prevent chronic diseases can go to EatRight Ontario's website at http://www.Ontario.ca/EatRight or call 1-877-510-510-2 and speak to a registered dietitian. This is a free service.[114]

- In 2004, the *Smoke-Free Ontario Act* was introduced, banning smoking in public places and places of employment by 2006.[115]

- On January 21, 2009, Ontario expanded on the *Smoke-Free Ontario Act* by banning smoking in a car while in the presence of a child under 16 years of age.[116]

- In FY 2009/2010, the Ministry of Health Promotion partnered with a variety of provincial and community organizations in priority neighbourhoods to deliver after-school programs and services as part of Ontario's After-School Initiative.[117] These programs include healthy eating and nutrition education to help combat childhood obesity, physical activity to encourage active lifestyles, personal health and wellness education to promote self-esteem, and other activities to address specific priorities based on local community needs.

Ideas for Improvement

Improve access to healthy food choices. Promote low-cost healthy foods (e.g., apples, bananas, broccoli, oats, watermelon, squash, potatoes, kale, eggs, spinach, tofu, milk, brown rice and whole grain pasta) that are accessible to people at all levels of income. Limit unhealthy food choices in school and workplace cafeterias, and remove junk food vending machines from schools.

Simplify routines. Create written instructions in plain language or simple checklists (e.g., a shopping list of healthy foods) for patients to follow.

Create healthy communities and enhanced access to opportunities for physical activity combined with health education.[118] Ensure communities have walking trails, exercise groups and access to recreational facilities for low income people. Employers could consider offering physical activity programs, workshops, classes and other resources at the workplace. Scientific experts recommend that physical activity and recreation should remain an integral part of the school curriculum.[119] It is also important to ensure neighbourhoods are safe, in order to encourage outdoor physical activity.

"De-normalize" unhealthy behaviours. Smoking bans in public places (already enacted in most settings in Ontario) have been shown to be highly effective.

Replace nicotine. Products such as nicotine gum, sprays, patches or lozenges, as well as certain drugs, can be used along with behavioural modification therapy to reduce the physiological craving for smoking.

Promote patient self-management, preferably through a counsellor with certified training in these techniques. Patients learn about their condition and are coached into setting their own reasonable goals for improvement (e.g., "I'll start by losing two pounds in the next three weeks") that fit with their lifestyle (e.g., "I'll have green tea instead of a double-double at my bridge game"). Then they build gradually on each improvement.

Make health promotion materials available — including posters, pamphlets, videos, ads and other educational materials. These can be used in healthcare settings, doctors' offices or public places where vulnerable populations meet.

Use flow sheets in office charts — a one-page document that keeps all key information in one place, and where compliance with best practices is recorded for each patient encounter. These can be used in either paper or electronic charts.

Use other members of the healthcare team. Nurses and health promotion educators can efficiently deliver health promotion and lifestyle counselling to patients.

Involve patients in care planning and educate them on what is included in their care plan and the reasons for this.

Improve community safety to promote community health and physical activity.

Display calorie content in chain restaurants, school cafeterias and menu boards.[120, 121]

10.2 Maternal and infant health

The time from conception to one year after birth is critical to the development of a child. It is important to pay attention to both the health of the mother and the infant during this time. If there are problems, the consequences can last for years or for a lifetime.

What we want	Consequences if we don't get it	Whom does this matter to?
Babies of a healthy weight.	Low birth weight results in increased risk of death, both at birth[318] and at all stages of life,[319] as well as learning difficulties,[320] high blood pressure, heart disease,[321] diabetes,[322, 323] asthma and hearing and vision problems[324] later in life.	The 136,000 babies born in Ontario annually, and their families.[325]
Breastfeeding for at least six months after birth.	Without this, there may be less bonding between mother and infant,[326] more infections and allergies[327] and possibly a greater risk of diabetes later in life.[328] There is less ovarian cancer, breast cancer and osteoporosis among breastfeeding moms.[329]	

Indicator	Value	Time trends & comparisons	Bottom line
Infant mortality rate (per 1,000 infants)	5.2*		The infant mortality rate did not improve between 2002 and 2007. We are higher than other countries, including Japan and UK.[330] Even our ability to count all infant deaths is poor, and our rates may be even higher.[331]
Percentage of babies with low birth weight	6.1%**		More babies are being born in Ontario with low birth weight. In 2005, Ontario had the third-highest rate of low birth weight babies in Canada, behind Alberta (6.4%) and Nunavut (8.3%).[332]
Percentage of mothers breastfeeding: —●— Right after birth -●- Exclusively for six months	90%*** 27%		Nine in 10 new mothers initiate breastfeeding, which is encouraging. However, too many women stop breastfeeding too soon. Only one in four continue to breastfeed their babies exclusively for six months after birth (which is what the World Health Organization recommends).[333] Breastfeeding rates have improved in the past three years, but we still lag behind British Columbia.[334]

Data sources:
* Statistics Canada, 2007, http://www40.statcan.gc.ca/l01/cst01/health21a-eng.htm — most recent result for 2007; infant mortality rate is the number of deaths of children less than one year of age, per 1,000 live births.
**Statistics Canada, 2005, http://cansim2.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&RootDir=CII/&ResultTemplate=CII/CII   &Array_Pick=1&ArrayId=1024005; rate of singleton live births weighing 500 to 2,499 grams immediately upon birth, per 1,000 live births.
*** CCHS, 2008, Statistics Canada, CANSIM table 105-0501.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause of Quality Problems

Issue: Infant mortality

More pre-term babies being born.[ ] This is due either to better technology or more older women using fertility drugs and having multiple pregnancies.

Crib deaths (sudden infant death syndrome). Parents may not be aware of unsafe sleep environments (e.g., cluttered cribs, second-hand smoke, sleeping position) or ways to reduce the risk (e.g., back sleeping) of sudden infant death syndrome.

Lack of knowledge about infant and baby safety. Parents may not be aware of how to keep babies safe during different stages of growth and development.

Health issues among First Nations people. Infant mortality is two times higher in First Nations in British Columbia and Manitoba, where data to measure this is available.[ ] This may be related to problems with general health, nutrition, addictions and access to prenatal care.

Issue: Low birth weight

Pregnant women may not have access to prenatal screening and healthcare during pregnancy. Prenatal tests are needed to detect complications, such as gestational diabetes, low iron or elevated blood pressure. Also, without primary care during pregnancy, women do not receive education regarding nutrition, smoking cessation and avoidance of drug and alcohol use. Access to prenatal healthcare can be lower among certain groups of women (e.g., teens, low income individuals, immigrants and First Nations people).

Pregnant women may not have access to resources to help maintain a healthy lifestyle during pregnancy. This includes proper nutrition, prenatal supplements and counselling for smoking cessation or substance abuse.

Issue: Low rates of breastfeeding

New mothers become discouraged with breastfeeding. They may have difficulties mastering breastfeeding skill, or become overwhelmed with complications of breastfeeding (e.g., mastitis and cracked, painful nipples). Breastfeeding often requires a high degree of support. Young mothers and people struggling with low incomes may not have access to the support they need.[ ]

Mothers have difficulty working and breastfeeding.[ ]

Lack of privacy to breastfeed in public places.

Lack of awareness of new guidelines. Mothers and healthcare providers may not be aware of recommendations for exclusive breastfeeding to six months (instead of four months, as previously recommended).

Ideas for Improvement

Provide public education for parents on how to keep their babies safe during all stages of development, including how to keep babies safe during sleep, the importance of the use of restraints in equipment such as strollers, swings and high chairs, proper use of car seats, and how to baby proof the home once a baby becomes mobile. Information should come from multiple sources, including prenatal class instructors, public health nurses and primary care providers (the primary care doctor, nurses or both).

Improve access to primary care. Safety counselling should occur in the primary care setting, as well as other places (see section 2.2).

Address mental health and addictions issues. New parents in high-risk communities should have access to counselling, psychotherapy and medications if necessary.

Improve access to primary care (see section 2.2).

Establish specialized prenatal care clinics staffed by interdisciplinary health teams (nurses, nurse practitioners, doctors, midwives, etc.) who can efficiently provide routine prenatal checkups.

Provide outreach to mothers in high-risk groups. Special attention should be paid to getting mothers in high-risk groups (e.g., teens, low income individuals, immigrants and First Nations people) to come in for prenatal screening and healthcare. Efforts need to be culturally and age appropriate. Access to proper nutrition should be arranged for women who are unable to afford nutritious food. Many Community Health Centres (CHCs) in Ontario offer prenatal care programs targeted to the specific needs of their populations (e.g., the North Kingston Community Health Centre,[ ] the Youth Centre servicing Ajax and Pickering,[ ] Norwest Community Health Centre and its many sites[ ] and the Norwest Community Health Centre Mobile Unit.[ ] Another resource is the Canada Prenatal Nutrition Program (CPNP).[ ]

Provide access to lactation consultants and clinics that can help mothers with proper latching technique, suggest remedies for complications and give tips to avoid mastitis.

Encourage employers to provide private spaces for moms to pump milk at work.

Encourage public places (e.g., shopping malls) to provide private spaces for breastfeeding moms.

Spread the word about support groups for breastfeeding mothers. Many of these exist already (e.g., La Leche League and support groups provided by public health units).[ ] It is important to ensure that those with low socioeconomic status are aware of them and can access them, and that the groups are responsive to their needs.

10.3 Sexual health

The World Health Organization defines sexual health as "a state of physical, emotional, mental and social well-being related to sexuality."[348] Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. We report here on just three sample indicators of sexual health, and aim to provide a broader perspective in future reports.

What we want	Consequences if we don't get it	Whom does this matter to?
Avoid sexually transmitted infections such as Chlamydia and HIV.	Untreated Chlamydia in women can lead to complications, such as pelvic inflammatory disease, which can result in ectopic pregnancies, infertility and life-threatening blood infections. In men, untreated infections can spread to the testicles and prostate and lead to infertility.[345] HIV infection can lead to AIDS, which has a high death rate and leads to infections, cancers,[346] dementia[347] and other major physical impairments.	The sexually active population of Ontario.
Avoid teen pregnancies.	Teen pregnancies are subject to a greater risk of anemia, high blood pressure, eclampsia and depression for the teen mother,[348] as well as a greater chance of dropping out of high school, being on social assistance and living in poverty.[349] Babies of teen mothers are at a greater risk of low birth weight and pre-term births, which can lead to higher risk of death, developmental problems, learning difficulties, hearing and visual impairments and chronic respiratory problems.[350] Children of teen mothers are at a greater risk of becoming teen parents themselves, thus perpetuating the cycle of teen pregnancy.[351]	The 409,000 females aged 15 to 19 in Ontario.[352]

Indicator	Value	Time trends & comparisons	Bottom line
Sexually transmitted Chlamydia rate per 100,000 people	219*		Two out of every 1,000 Ontarians have been diagnosed with a sexually transmitted Chlamydia infection. There has been a major increase in this rate over the past five years, but this may be due to the availability of a more sensitive test for Chlamydia.
HIV incidence per 100,000 people	8.7**		Over the last five years, HIV incidence has declined in Ontario. There is still room to improve.
Teen pregnancy rate per 1,000 teen girls	23***		Ontario had one of the lowest teen pregnancy rates in Canada in 2005, with 23 live births per 1,000 teen girls.[354] From 1999 to 2005, the rate declined. There is still room to improve.

Root Cause of Quality Problems

Lack of knowledge about sexual health (knowledge gap). People may lack the knowledge, skills and attitudes to make decisions that promote and maintain their sexual health and prevent unintended pregnancies and sexually transmitted infections.

Lack of communication. Sexual health issues may not be raised, discussed and negotiated with partner(s).

Related self-destructive behaviour.

Lack of access to contraception.

Unknown spread of infection in the community.

What is Ontario doing?

- MOHLTC has released the Ontario Public Health Standards 2008, which govern aspects of public health programs in Ontario and focus on reducing and preventing sexually transmitted infections and blood-borne infections, as well as promoting healthy sexuality.[360] The standards include increasing public awareness, collaborating with community partners and increasing community health promotion capacity.

Ideas for Improvement

Provide access to comprehensive sex education. Develop sexual health education programs that are age appropriate, culturally sensitive and respectful of sexual orientation and gender identity. Such education typically takes place in schools and community agencies. It should also be provided in an environment where participants feel included and safe to ask questions and share views with others. Public awareness campaigns (e.g., radio, television, billboards) have also been tried in high-risk areas.

Educate parents about how to talk with teenagers about sexual health. The National Campaign to Prevent Teen and Unplanned Pregnancy in the US recommends that parents talk to their children about sex early and often, always know where their teen is, know their teen's friends and families, encourage group activities over frequent dating, strongly discourage their teen from dating someone who is more than two years older, know what their teen reads, watches or listens to, and be aware of inappropriate sexual messages in popular media.[355]

Strengthen skills in decision-making and assertive communication. This involves increasing awareness of the benefits of taking action to promote sexual health and reducing negative outcomes. Involve individuals in the decision-making process so their values, needs and concerns are integrated in the effort to avoid being pressured into unwanted sexual activity. Programs that use role-playing to teach these skills have been effective.[356]

Promote strategies to prevent dating violence and sexual abuse. Dating violence can lead to unwanted sexual activity, which can lead to sexually transmitted infections and unplanned pregnancies. In the US, the prevalence of dating violence is estimated at one in 11 teens.[357] Strategies include identifying those at risk for sexual violence (e.g., history of abuse in the family, low self-esteem) and educating teens that abusive behaviour should not be considered the norm. The Choose Respect campaign in the US[358] aims to prevent dating abuse by encouraging teens to form healthy relationships with others, emphasizing respect, communication and honesty, before they even start to date.

Provide programs to address low self-esteem and depression, including psychotherapy, counselling and activities to help individuals connect with their family, school, community activities or volunteer work.

Offer prevention programs for illicit drug use, which is associated with risky sexual behaviour.

Ensure access to contraception. Some teen health clinics provide free contraception (e.g., birth control pills) to those who cannot afford it. It's important that such services be available and known about throughout the province. Some places in the US have tried putting such clinics in high-risk schools.[359]

Deliver treatment and follow-up for people with sexually transmitted infections and their sexual partners to reduce further spread of infection. Health professionals who diagnose sexually transmitted infections must by law report them to public health authorities, who then track down contacts. Even so, it's important to develop trust with those who have sexually transmitted infections to encourage them to truthfully name all people who may have been infected.

Family physicians and teen clinics should call sexually active women in for an annual pap test and sexually transmitted infection check. Build reminder systems in electronic medical record systems to help achieve this.

10.4 Preventive measures

Preventive measures to help ensure good health include vaccinations against infections and screening tests to detect diseases early so that they can be treated before they become more severe or incurable. These measures contribute to keeping the population healthy. In September 2009, there were 4,037 confirmed cases of H1N1 in Ontario,[362] especially affecting young children and those with chronic medical conditions.

What we want	Consequences if we don't get it	Whom does this matter to?
Flu vaccinations, especially for the elderly.	More pneumonia cases, hospitalizations and deaths,[362] as well as increased healthcare costs.	All Ontarians, but especially the elderly and those with chronic diseases.
Screening for breast, cervical and colon cancers (mammography, pap test and fecal occult blood test, respectively) for all those eligible.	Premature death[363][364] and suffering caused by the treatment of advanced cancers, as well as increased healthcare costs and lost productivity.	Those at risk for breast cancer (women aged 50 to 69), cervical cancer (women to age 69) and colon cancer (people aged 50 to 74). Within a lifetime, one in nine women get breast cancer and one in 15 get colon cancer.
Screening for osteoporosis for all those eligible.[365]	Fractures that cause disability, pneumonia, death, hospitalization and/or admission to LTC homes, as well as increased healthcare costs.	Mainly women over age 55; also some elderly men with certain risk factors.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of people aged 65 and over who reported having a flu shot in the year prior to the survey	75%*		**Three-quarters of seniors are getting flu shots. This has not improved in the last eight years. Ontario is better than most provinces, but behind Nova Scotia. We can do better.**
Percentage of people who had the H1N1 shot	37%**		**More than one-third of Ontario's population received H1N1 flu shots by the end of 2009. This rate is lower than most provinces. Newfoundland vaccinated 68% of their population against H1N1. There is lots of room for improvement.**
Percentage of Ontario women aged 50 to 69 who reported having a mammogram in the two years prior to the survey	73%*		**Three-quarters of women aged 50 to 69 report they have had a mammogram in the past two years and four out of five adult women report they have had a pap test in the previous three years. There has been no improvement.**
Percentage of Ontario women aged 20 to 69 who reported having a pap test in the three years prior to the survey	80%*		
Percentage of people aged 50 to 74 who reported having a fecal occult blood test in the two years prior to the survey	31%*		**One in three adults aged 50 to 75 get screened for colon cancer. Rates have improved in the last three years, likely due to Ontario's ColonCancerCheck program.[366] We need more progress to hit the province's goal of 40% by 2011.[367]**
Percentage of women aged 65 who had a bone mineral densitometry test since turning 55 years of age	80%***		**Four in five women are getting screened for osteoporosis. There has been a major improvement over the last six years.**
Rates of up-to-date immunization for school-aged children, for:			**Too many school-aged children — one in five — do not have up-to-date immunizations. We can do better. There are some public health districts in Ontario that have immunization rates of 98%.**
— Measles, mumps, rubella (MMR)	89%****		
— Diphtheria, pertussis, tetanus (DPT)	82%		
— Polio IPV/OPV	89%		
— MMR, DPT and polio	79%		
— Hib (Haemophilus B)	97%		

Data sources: * COHS, 2008, calculated by ICES. Self-reported rates tend to overestimate actual rates; therefore, the true rates may be lower. ** MOHLTC News Release, December 18, 2009. http://www.health.gov.on.ca/en/news/release/2009/dec/fact_20091218.aspx. *** OHIP Database, Statistics Canada Population Files, RPD, FY 2008/09, calculated by ICES. **** MOHLTC, compilation of Immunization Records Information System, overall immunization coverage rates in Ontario complete as appropriate for age for the school years 2004/05 to 2007/08, corresponding to birth years 1987–1997 to 1990–2000.

Root Cause of Quality Problems

People do not have access to primary care, where many preventive services are given, or accessing primary care may be difficult if they live in remote areas.

People forget when they need screening.

Providers forget to do preventive screening, because they are busy or distracted by other patient concerns.

Patient knowledge gap. People may avoid having preventive procedures because they are unpleasant or uncomfortable, or they have misconceptions about the risks (e.g., flu vaccinations).

Ideas for Improvement

Improve access to primary care (see section 2.2).

Bring screening to hard-to-reach populations. Some centres have mobile care units that deliver primary care to remote populations.[xx] The Ontario Breast Screening Program[xx] has a van that serves small communities in northern Ontario.[xx]

Provide access to vaccinations outside primary care offices, such as at public health clinics or vaccination clinics, with priority given to high-risk people.

Develop provincial registries for patient reminders. Reminding patients of routine screening engages them in their preventive care. Currently in Ontario, the Ontario Breast Screening Program[xx] and ColonCancerCheck[xx] send reminders to people who are due for screening. These programs could be maintained and expanded to include other risk groups and cancer types.

Use electronic medical records to generate clinical reminders of when a patient is due for a screening test.

Provide primary care practices with feedback on how well they are doing when it comes to using preventive screening.

Launch public awareness campaigns, which can be effective in encouraging people to get screened early.[xx]

What is Ontario doing?

- In 2007, the MOHLTC, in collaboration with Cancer Care Ontario, introduced ColonCancerCheck, a provincial screening program, with the goal of decreasing colon cancer mortality.[xx] The program provides access to colorectal cancer screening through the use of fecal occult blood tests, facilitates the reporting of colonoscopies through the Colonoscopy Interim Reporting Tool (CIRT)[xx] and utilizes various vehicles, such as e-cards and television campaigns, to increase public awareness.[xx]

- Since October 2007, the human papillomavirus (HPV) vaccine has been made available to all girls in grade eight on a volunteer basis. HPV has been linked to cervical cancer in women.[xx]

10.5 Deaths and harm that could be avoided by prevention

There are huge opportunities to avoid deaths and harm through prevention — through the elimination of unhealthy lifestyles, early detection of cancer and mental health problems and injury prevention activities. Taking advantage of these opportunities will lead not only to a healthier population, but also to decreased healthcare costs.

What we want	Consequences if we don't get it	Whom does this matter to?
Minimize cases of diseases (e.g. lung cancer and heart attack) related to unhealthy habits like smoking.	More disability, deaths, lost time from work, hospitalizations and health care costs.	All 13 million Ontarians.
Avoid preventable injuries (including traffic accidents, falls, sports injuries and worker injuries).[380]		
Minimize deaths from cancers where early detection is possible (e.g. breast cancer).		
Minimize suicides and intentional self-harm, through community awareness, early recognition of warning signs, and access to mental health services and social supports.	Devastating impact not only to individual but family and community; one suicide can trigger suicides in others[378].	All Ontarians, but especially those with depression, schizophrenia,[379] substance abuse or past suicide attempts.

Indicator	Value	Time trends & comparisons	Bottom line
Lung cancer incidence per 100,000 people	52*		Lung cancer incidence has decreased in the last 10 years. We are better than the UK (64) and US (60).[381]
Breast cancer mortality rate per 100,000 females	21*		The rate of female breast cancer mortality in Ontario has been decreasing since 1986. The most recent trend is a statistically significant decline, since 1998, of 2% per year.
Acute myocardial infarction (AMI) incidence per 100,000 people aged 20 and over	203**		The incidence of heart attack has decreased over the past six years.
Rate of suicides per 100,000 people in Canada	12***		Suicide rates in Canada have been constant from 2000 to 2005. The tracking of suicide is poor — we were unable to access recent data for Ontario and are concerned that suicides are under-reported.
Rate of emergency department visits for intentional self-harm per 100,000 people aged 12 and over	89†		Ontario's rate of emergency department visits for intentional self-harm has dropped in the last five years, but there is still room to improve.
—•— Rate of injury-related emergency department visits per 100,000 people	8,440††		The rates of injury-related emergency department visits and hospitalizations have decreased slightly over the last five years. There is still room to improve.
—•— Rate of injury-related hospitalizations per 100,000 people	354		

Data sources: * Cancer Care Ontario, 2006. ** DAD, RPD, FY 2008/09, calculated by ICES. *** Statistics Canada, CANSIM, table 102-0551 and Catalogue no. 84F0209X, 2005.
† NACRS, RPD, FY 2008/09, calculated by ICES. †† DAD, NACRS, RPD, FY 2008/09, calculated by ICES.

For strategies to avoid deaths or injuries related to unhealthy behaviours (e.g., lung cancer and heart attacks), see section 10.1.
For strategies to avoid deaths or injuries related to early detection (e.g., breast cancer), see section 10.4.

Root Cause of Quality Problems

Issue: Suicide or intentional self-harm

People may have difficulties with personal or social issues, such as depression, addictions, a recent loss or abuse, or stresses related to unemployment, poverty or insecure housing.

Warning signs go unnoticed. Family, friends, colleagues and healthcare providers may not notice warning signs of suicide.

"Copycat suicides." Others may mimic a suicide.

Issue: Injuries

Sports injuries

Falls among the elderly

People injured on the job

Traffic-related injuries

Assaults

Accidental poisonings

Ideas for Improvement

Provide access to treatment programs. People need to be able to freely access treatment programs for underlying depression, other mental health conditions and addictions (e.g., psychotherapy, counselling, group therapy and peer support groups) or for dealing with abuse. These programs should be available through community activities, volunteer work or suicide hotlines. Physicians should consider antidepressants or other medications as needed.

Address underlying determinants of health. People may need assistance with employment, housing and other social needs.

Develop screening tools for high-risk populations. For example, programs such as school gatekeeper programs can train school staff to identify students at risk.[382]

Create public education campaigns. These should be appropriately targeted to specific groups to reduce stigma, advertise suicide hotlines, encourage people to seek help and teach parents to look for warning signs.

Ensure community intervention after a suicide occurs. Health Canada reports on community actions that can be taken in First Nations communities, where clusters of suicides tend to occur more often among youth than in non-Aboriginal populations.[383] See "Acting on what we know: preventing youth suicide in First Nations," available at http://www.hc-sc.gc.ca/fniah-spnia/pubs/promotion/_suicide/prev_youth-jeunes/index-eng.php.

Avoid sensationalizing suicides in the media to avoid copycat incidents.[384]

Support sports injury prevention programs that promote the proper use of safety equipment, such as helmets, and enforce penalties for dangerous manoeuvres.

See section 4.5 for strategies to reduce the risk of falls in LTC homes and section 4.6 for strategies to reduce the risk of falls in homecare and the community.

See section 8.3 for change ideas related to healthy work environments.

Create public awareness campaigns for safe driving. Target drinking and driving, using cell phones while driving and proper use of car seats for infants and children. Also look to increase public awareness about pedestrian safety while crossing the road. Enforcement of traffic safety laws and safer designs of roads could also reduce traffic-related injuries.

Support domestic violence prevention programs and public awareness campaigns on assault prevention — for example, being aware of surroundings — with specialized safety training for occupations at risk (e.g., cab drivers, delivery people).

Promote child safety during primary care visits and during vaccination of infants.

11 LHIN Analyses

In this chapter, we present data on differences between each LHIN and the provincial average, for selected indicators where data were available. In the first set of tables, we present data for each LHIN, identifying where its performance is better or worse than average. In the table at the end of this chapter, we present more detailed results for each indicator and each individual LHIN. Green shading shows that the LHIN was significantly better than the provincial average, while red shading shows the LHIN is worse than average.

Differences were considered significant if they were both statistically significant* and clinically significant. We used the following guideline to define clinically significant differences:

Type of indicator	Guidelines for a clinically significant difference between a LHIN and the provincial average
Wait times	Relative difference of 25%
Rate of a serious adverse outcome	Relative difference of 25%
Percentage adoption of a best practice (process measure, often with a target of 100%)	Absolute difference of 5%
Patient experience variable (e.g., percentage satisfied with x)	Absolute difference of 5%

Abbreviations used in this chapter are as follows:

ALC = alternate level of care (in this case, a hospital bed occupied by someone who could be better served in a different setting, such as a long-term care home)

AMI = acute myocardial infarction (heart attack)

CHF = congestive heart failure

COPD = chronic obstructive pulmonary disease (emphysema or chronic bronchitis)

ED = emergency department

FOBT = fecal occult blood test

LHIN = local health integration network

LTC = long-term care home

*For some indicators where data was obtained from other parties, confidence intervals were not available, but statistical significance was inferred based on estimates of the sample size and assumptions about the probability distribution of the variable. See the technical appendix to this document at www.ohqc.ca for more details.

Local Health Integration Networks
Réseaux local d'intégration des services de santé

Erie St. Clair LHIN	1	RLISS d'Érié St-Clair
South West LHIN	2	RLISS de santé du Sud-Ouest
Waterloo Wellington LHIN	3	RLISS de Waterloo Wellington
Hamilton Niagara Haldimand Brant LHIN	4	RLISS de Hamilton Niagara Haldimand Brant
Central West LHIN	5	RLISS du Centre-Ouest
Mississauga Halton LHIN	6	RLISS de Mississauga Halton
Toronto Central LHIN	7	RLISS de Toronto-Centre
Central LHIN	8	RLISS du Centre
Central East LHIN	9	RLISS du Centre-Est
South East LHIN	10	RLISS du Sud-Est
Champlain LHIN	11	RLISS de Champlain
North Simcoe Muskoka LHIN	12	RLISS de Simcoe Nord Muskoka
North East LHIN	13	RLISS du Nord-Est
North West LHIN	14	RLISS du Nord-Ouest

ERIE ST. CLAIR LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times and higher patient experience ratings in the ED • Shorter wait times for LTC placement from hospital and lower percentage of ALC hospital bed days • Higher mammography screening rates
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor are comparable to the provincial average, even though the supply of family physicians and specialists is below average • Hospital care: use of right drugs for AMI after discharge; AMI, COPD and CHF readmissions; AMI and stroke mortality • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements • Chronic disease management: diabetes • LTC safety: use of potentially dangerous drugs in the elderly and falls • Hospital – patients discharged with the information they need • Most healthy behaviours: smoking, physical inactivity • Preventive health screening: pap test and FOBT • Rates of intentional self-harm and hospitalization for injuries • AMI incidence (rate of heart attacks)
Worse than average results, major room to improve	• Higher rates of obesity, drinking and inadequate fruit and vegetable intake • Lower hospital patient experience ratings (especially with getting answers or clear explanations) • Hospital care: fewer prescriptions for the right drugs for CHF after discharge • Chronic disease management: higher admission rate for ambulatory care sensitive conditions (where hospitalization might have been avoided with better primary care) • Lower rate of osteoporosis screening

SOUTH WEST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times and higher patient experience ratings in the ED • Shorter wait times for LTC placement for people in the community; the proportion of people who get their first choice of LTC is similar to the provincial average • Hospital patients have higher patient experience ratings and more are discharged with the information they need • Shorter wait times for CT scans
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor • Percentage of ALC hospital bed days • Hospital care: use of right drugs for AMI after discharge; AMI, CHF, and COPD readmissions; AMI and stroke mortality • Chronic disease management: diabetes (complications, eye visits and drug use) and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Wait times for most surgeries: general surgery, cataract, hip and knee replacements; also MRI scans • Most healthy behaviours: smoking, physical inactivity, obesity, fruit and vegetable intake • Rates of intentional self-harm • Most preventive health screening: mammography, pap test and FOBT • Rate of heart attacks
Worse than average results, major room to improve	• Higher rate of hospitalization for injuries • Lower rate of osteoporosis screening • Longer wait times for cancer surgeries • Higher proportion of the population reporting heavy drinking

Note: South West LHIN is also a heavy user of clinical telemedicine services.

WATERLOO
WELLINGTON LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter wait times for hip and knee replacements, CT scans • For CHF patients in hospital, better drug treatment and lower readmission rate
Average results, still room to improve	• ED wait times — a mixed picture: longer wait times to see a doctor, but shorter wait times for a bed for those who are admitted • Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor; supply of family physicians and nurse practitioners is also average, but specialist supply is below average • Wait times for most surgeries: cancer, general surgery, cataract; also MRI scans • Hospital care: use of right drugs for AMI after discharge; AMI, and COPD readmissions; AMI and stroke mortality • Hospital patient experience rating and % of patients discharged with the information they need • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Healthy behaviours: smoking, drinking, physical inactivity, obesity, fruit and vegetable intake • Preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rate of hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Longer wait times for LTC placement, especially for people in the community; however, the percentage of people who get their first choice of LTC is similar to the provincial average • Higher percentage of ALC hospital bed days • Higher rate of intentional self-harm

HAMILTON NIAGARA
HALDIMAND BRANT LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Access to primary care: lower percentage of adults without a family doctor; however, wait times to see a family doctor are comparable to the provincial average
Average results, still room to improve	• Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements • Hospital care: use of right drugs; AMI, CHF and COPD readmissions; AMI and stroke mortality • Hospital patient experience rating and % of patients discharged with the information they need • ED patient experience • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Healthy behaviours: smoking, drinking, physical inactivity, obesity, fruit and vegetable intake • Preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rate of hospitalization for injuries and intentional self-harm • Rate of heart attacks
Worse than average results, major room to improve	• Longer ED wait times • Longer wait times for LTC placement, especially for people in hospital; however, the percentage of people who get their first choice of LTC is better than the provincial average • Higher percentage of ALC hospital bed days • Longer wait times for CT and MRI scans

CENTRAL WEST LHIN

Superior results, no room to improve	• Prescribing of statins for patients hospitalized for AMI (91%)
Better than average results, still room to improve	• Shortest wait times in Ontario for LTC placement; however, lower rate of people who get their first choice of LTC • Lower percentage of ALC hospital bed days • Shorter wait times for CT and MRI scans • Hospital care: better drug prescribing practices for AMI ; lower stroke mortality • Lower rate of intentional self-harm
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements • Hospital care: drug prescribing practices and readmission for CHF; AMI mortality; COPD readmissions • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Some healthy behaviours: smoking, obesity, fruit and vegetable intake • Preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rate of hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Hospital care: higher AMI readmissions • Longer ED wait times and lower patient experience ratings in the ED • Hospital patients have lower patient experience ratings and fewer are discharged with the information they need • Higher proportion of the population reporting heavy drinking and physical inactivity

MISSISSAUGA HALTON LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Lower rate of AMI readmissions • Chronic disease management: fewer admissions for ambulatory care sensitive conditions • Higher rate of osteoporosis screening • Lower rate of intentional self-harm
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor; however, wait times to see a family doctor are better than the provincial average • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements; also CT scans • Wait for LTC placement; however, lower rate of people who get their first choice of LTC • Percentage of ALC hospital bed days • Hospital care: drug prescribing practices; AMI and stroke mortality; COPD and CHF readmissions • Chronic disease management: diabetes; CHF and AMI one-year mortality • LTC safety: use of potentially dangerous drugs in the elderly and falls • Healthy behaviours: smoking, drinking, obesity, physical inactivity, fruit and vegetable intake • Most preventive health screening: mammography, pap test and FOBT • Rate of hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Longer wait times in the ED to transfer admitted patients to a bed, and lower patient experience ratings • Hospital patients have lower patient experience ratings and fewer are discharged with the information they need • Longer wait times for MRI scans

TORONTO CENTRAL LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter wait times for LTC placement • Lower percentage of ALC hospital bed days • Shorter wait times for knee replacements and MRI scans • Hospital- patients have higher patient experience ratings and more are discharged with the information they need • Lower rate of obesity
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor • Wait times for surgery: cancer, general surgery, cataract, hip replacements; also CT scans • Hospital care: drug prescribing practices; AMI and CHF readmissions; AMI and stroke mortality • ED patient experience • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Other healthy behaviours: smoking, drinking, physical inactivity, fruit and vegetable intake • Most preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rates of intentional self-harm and hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Longer ED wait times • Higher rate of COPD readmissions • Highest incidence of HIV in Ontario

CENTRAL LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Access to primary care: lower percentage of adults without a family doctor; however, wait times to see a family doctor are comparable to the provincial average • Shorter wait times for knee replacements • Better drug prescribing practices for AMI hospital patients • Lower rate of COPD readmissions • Lower rates of smoking and obesity • Higher rate of osteoporosis screening • Lower rates of intentional self-harm and hospitalization for injuries • Lower rate of heart attacks • Chronic disease management: lower admission rate for ambulatory care sensitive conditions
Average results, still room to improve	• ED wait times • Wait times for most surgeries: cancer, general surgery, cataract, hip replacements; also CT scans • Wait times for LTC placement and percentage of people who get their first choice of LTC • Percentage of ALC hospital bed days • Hospital care: drug prescribing practices for CHF; AMI and CHF readmissions; AMI and stroke mortality • Hospital patient experience ratings and complete discharge instructions • Chronic disease management: diabetes and one-year mortality for CHF and AMI • LTC safety: use of potentially dangerous drugs in the elderly and falls • Healthy behaviours: physical inactivity, fruit and vegetable intake • Most preventive health screening: mammography, pap test and FOBT
Worse than average results, major room to improve	• Longer wait times for MRI scans • Lower patient experience ratings in the ED • Higher proportion of the population reporting heavy drinking

CENTRAL EAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• None
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements; also CT and MRI scans • Wait times for LTC placement and percentage of people who get their first choice of LTC • Percentage of ALC hospital bed days • Hospital care: drug prescribing practices for AMI, CHF; AMI, CHF and COPD readmissions; AMI and stroke mortality • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Hospital patient experience ratings and complete discharge instructions • Most healthy behaviours: smoking, obesity, physical inactivity, fruit and vegetable intake • Preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rates of intentional self-harm and hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Longer ED wait times and lower patient experience ratings in the ED • Higher proportion of the population reporting heavy drinking

SOUTH EAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times • More people physically active
Average results, still room to improve	• Access to primary care: percentage of adults without a family doctor • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements; also CT and MRI scans • Percentage of ALC hospital bed days • Hospital care: drug prescribing practices for AMI, CHF; AMI, CHF and COPD readmissions; AMI and stroke mortality • Hospital patient experience ratings and complete discharge instructions • Patient experience ratings in the ED • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Healthy behaviours: drinking, fruit and vegetable intake • Most preventive health screening: mammography, pap test and FOBT • Rate of hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Longer wait times to see a family doctor • Longer wait times for LTC placement from hospital; however, percentage of people who get their first choice of LTC is comparable to the provincial average • Higher rates of smoking and obesity in the population • Lower rate of osteoporosis screening • Higher rate of intentional self-harm

CHAMPLAIN LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Higher patient experience ratings in the ED • Better drug prescribing practices for AMI hospital patients • More people physically active • Higher rate of FOBT
Average results, still room to improve	• ED wait times • Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor; the supply of family doctors and specialists is higher than average • Wait times for some surgeries: cancer, general surgery, cataract; also MRI scans • Percentage of ALC hospital bed days • Hospital care: drug prescribing practices for CHF; AMI, CHF and COPD readmissions; AMI and stroke mortality • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions • LTC safety: use of potentially dangerous drugs in the elderly and falls • Hospital patient experience ratings and complete discharge instructions • Most healthy behaviours: smoking, drinking, obesity, fruit and vegetable intake • Most preventive health screening: mammography, pap test and osteoporosis screening • Rates of intentional self-harm and hospitalization for injuries • Rate of heart attacks
Worse than average results, major room to improve	• Highest overall wait times for LTC placement in the province (more than double the provincial average); wait times for those waiting in the community are particularly high; the percentage of people who get their first choice of LTC is comparable to the provincial average • Longer wait times for hip and knee replacements and CT scans • Higher incidence of HIV

NORTH SIMCOE MUSKOKA LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter wait times for CT scans
Average results, still room to improve	• ED wait times — mixed: length of stay for the typical patient is shorter than the provincial average, but patients who are admitted wait longer to be admitted • ED patient experience ratings • Percentage of ALC hospital bed days • Wait times for surgery: cancer, general surgery, cataract, hip and knee replacements; also MRI scans • Hospital care: drug prescribing practices for CHF, AMI; AMI, CHF and COPD readmissions; AMI and stroke mortality • Hospital patient experience ratings and complete discharge instructions • Chronic disease management: diabetes and admissions for ambulatory care sensitive conditions; however, one-year AMI mortality is higher than average • Healthy behaviours: obesity, physical inactivity • Most preventive health screening: mammography, pap test, FOBT and osteoporosis screening • Rate of intentional self-harm • Rate of heart attacks • Access to primary care: percentage of adults without a family doctor and wait times to see a family doctor • LTC safety: use of potentially dangerous drugs in the elderly
Worse than average results, major room to improve	• Longer wait times for LTC placement, especially for those in hospital; the percentage of people who get their first choice of LTC is comparable to the provincial average • More ED visits from LTC that might have been avoided • LTC safety: more falls presenting to the ED • Higher rates of smoking, drinking, low fruit and vegetable intake • Higher rate of hospitalization for injuries

NORTH EAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times • Higher rate of physical activity • Shorter wait times for CT scans
Average results, still room to improve	• Wait times for some surgeries: cancer, general surgery, cataract; also MRI scans • Wait times to see a family doctor • Hospital- patient experience ratings and percentage of patients discharged with the information they need • Patient experience ratings in the ED • Most preventive health screening: mammography, pap test and FOBT • LTC safety: falls • Hospital care: drug prescribing practices; readmissions for CHF and COPD; stroke mortality • Healthy behaviours: fruit and vegetable intake
Worse than average results, major room to improve	• Highest percentage of ALC beds in the province • Highest wait times for LTC placement for hospital patients in the province; however, a higher percentage of people who get their first choice of LTC • Highest proportion of patients admitted to LTC who may not need to be there • LTC safety: greater use of potentially inappropriate "Beers list" drugs • Higher percentage of adults without a family doctor; family physician supply is slightly above average and nurse practitioner supply is much higher than average, but specialist supply is a lot lower; other research suggests that many rural and remote family doctors perform tasks that many specialists do, and that helps to explain why access to family doctors is still a problem • Longer wait times for hip and knee replacements • Chronic disease management: higher rates of complications from diabetes and more admissions for ambulatory care sensitive conditions (where hospitalization might have been avoided with better primary care) • Hospital care: worse AMI management (fewer prescriptions for the right drugs; higher mortality; higher readmissions) • Higher rates of smoking, drinking, obesity, low fruit and vegetable intake • Lower rate of osteoporosis screening • Higher rates of intentional self-harm and hospitalization for injuries • Higher rate of heart attacks

Note: North East LHIN is also a very heavy user of clinical telemedicine services.

NORTH WEST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times • Shorter wait times for CT and MRI scans • Highest rate of diabetes eye exams in the province (perhaps due to the mobile eye van that travels to remote communities) • Higher rate of physical activity
Average results, still room to improve	• Percentage of ALC hospital bed days • Wait times for most surgeries: cancer, cataract, hip and knee replacements • Hospital care: drug prescribing practices for AMI (however, drug prescribing practices for CHF are worse than average); AMI, CHF and COPD readmissions; AMI and stroke mortality • LTC safety: use of potentially dangerous drugs in the elderly and falls • Most preventive health screening: mammography, pap test and FOBT • Patient experience ratings in the ED
Worse than average results, major room to improve	• Longest wait times for LTC placement in the province for people in the community (410 days — more than one year); wait times for LTC placement from hospital are close to the provincial average, and the percentage of people who get their first choice of LTC is comparable to the provincial average • Access to primary care: higher percentage of adults without a family doctor and longer wait times to see a family doctor; family physician supply is slightly above average and nurse practitioner supply is much higher than average, but specialist supply is a lot lower; other research suggests that many rural and remote family doctors perform tasks that many specialists do, and that helps to explain why access to family doctors is still a problem • Chronic disease management: higher rates of complications from diabetes and more admissions for ambulatory care sensitive conditions (where hospitalization might have been avoided with better primary care) • Lower hospital patient experience ratings (especially with getting information or questions answered) • Longer wait times for general surgery • More unnecessary pre-operative chest X-rays for cataract surgery • More ED visits from LTC that might have been avoided • Higher rates of smoking, drinking, obesity and lower fruit and vegetable intake • Higher rates of intentional self-harm and hospitalization for injuries • Higher rate of heart attacks • Lower rate of osteoporosis screening

Note: North West LHIN is also a very heavy user of clinical telemedicine services.

Attribute/Theme	Indicator	Desired Direction	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Accessible 2.1 Wait Times in emergency departments	Percentage of patients who left without being seen. 2008	BETTER →	5.7%	5.1%	3.0%	6.9%	5.5%	6.0%	5.2%	5.5%	5.5%	5.6%	•	5.0%	4.5%	3.3%	3.1%
	Median time (hours) to MD assessment by overall Canadian Triage and Acuity Scale (CTAS) level. 2008/09	BETTER →	1.2	1.1	0.9	1.6	1.1	1.5	1.4	1.6	1.5	1.3	0.9	1.3	0.9	0.9	0.8
	Median time (hours) from admission to transfer to bed by overall Canadian Triage and Acuity Scale (CTAS) level. 2008/09	BETTER →	3.0	1.8	1.6	1.7	5.0	3.3	5.0	4.4	3.6	3.8	2.4	2.9	4.9	1.9	0.8
	Percentage of emergency department patient care completed within recommended timeframe by overall Canadian Triage and Acuity Scale (CTAS) level. Apr-Jun 09	BETTER ←	78%	85%	87%	76%	73%	69%	79%	64%	75%	76%	85%	74%	87%	88%	85%
Accessible 2.2 Access to primary care	Percentage of adults who are without a regular doctor. 2008/09	BETTER →	6.8%	8.5%	8.6%	5.6%	3.4%	4.6%	6.8%	9.3%	3.9%	6.4%	5.2%	8.4%	6.8%	13%	13%
	Percentage of adults who were able to see their doctor on the same or next day the last time they were sick or needed medical attention. 2008/09	BETTER ←	48%	44%	44%	45%	44%	52%	60%	54%	49%	50%	35%	45%	38%	48%	32%
Accessible 2.3 Surgical wait times**	Percentage of cancer surgeries done within priority 4 wait time target	BETTER ←	96%	98%	89%	99%	97%	97%	95%	95%	99%	97%	96%	95%	98%	96%	99%
	Percentage of general surgeries done within priority 4 wait time target	BETTER ←	97%	98%	96%	99%	96%	99%	98%	95%	99%	98%	94%	96%	97%	97%	89%
	Percentage of cataract surgeries done within priority 4 wait time target	BETTER ←	98%	100%	99%	100%	99%	96%	97%	99%	100%	97%	98%	98%	98%	99%	97%
	Percentage of hip replacement done within priority 4 wait time target	BETTER ←	93%	95%	95%	100%	93%	92%	95%	97%	98%	92%	94%	82%	88%	71%	91%
	Percentage of knee replacement done within priority 4 wait time target	BETTER ←	90%	94%	92%	100%	88%	94%	89%	96%	96%	93%	93%	80%	86%	61%	86%
	Percentage of CT scans done within priority 4 wait time target	BETTER ←	82%	91%	87%	89%	71%	92%	79%	82%	80%	83%	89%	67%	87%	91%	93%
	Percentage of MRI scans done within priority 4 wait time target	BETTER ←	42%	52%	45%	48%	33%	48%	26%	50%	32%	43%	39%	38%	39%	44%	75%
Accessible 2.3 Access to specialists (Telemedicine)	Rate of telemedicine use for clinical patient consultations per 100,000 population. 2008/09	BETTER ←	416	239	989	41	45	12	1.9	113	4.2	107	148	327	470	2758	6850

* Data not reported for this indicator for South East LHIN due to data quality issues.
** These indicators differ from the ones listed in section 2.3 as data for each priority level for each type of procedure was not available by LHIN. Totals here represent an average from January to October 2009.

= better than average   [ ] = not significantly different from average   [shaded] = worse than average

Attribute/Theme	Indicator	Desired Direction	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Accessible 2.4 Access to long-term care	Median number of days to LTC home placement overall. Apr-Jun 09	BETTER ←	105	97	86	156	144	40	122	78	124	88	112	237	120	130	118
	Median number of days to LTC home placement for those placed from hospital. Apr-Jun 09	BETTER ←	53	26	44	42	79	25	47	56	56	57	84	47	71	104	45
	Median number of days to LTC home placement for those placed from home. Apr-Jun 09	BETTER →	173	131	125	246	169	104	201	147	214	136	141	301	174	150	410
	Percentage of residents placed into LTC who got their first choice of home the first time around. Apr-Jun 09	BETTER →	39%	40%	39%	35%	45%	30%	33%	38%	38%	37%	39%	37%	37%	45%	41%
Effective 3.1 Use of right treatments in hospital	Percentage of elderly patients with AMI who, within 90 days of discharge, filled a prescription for the recommended drugs all three at once : Statin, Beta-blocker, and ACE/ARB. 2008/09 *	BETTER ←	60%	57%	63%	62%	58%	66%	58%	60%	65%	60%	61%	66%	58%	47%	56%
	Percentage of elderly patients with CHF who, within 90 days of discharge, filled a prescription for the recommended drugs both at once : ACE/ARB and Beta-blocker. 2008/09	BETTER ←	51%	43%	47%	60%	51%	55%	50%	53%	54%	52%	49%	53%	49%	46%	43%
Effective 3.2 Chronic disease management	Percentage of diabetic patients who, in the past 12 months, had an eye exam. 2008	BETTER ←	51%	51%	48%	50%	52%	33%	57%	39%	55%	57%	58%	51%	56%	52%	72%
	Percentage of elderly diabetic patients (aged 66+) who, in the past year, regularly filled prescriptions for both at once: ACE/ARB and Statin, 2008/09	BETTER ←	46%	45%	43%	45%	47%	45%	47%	45%	45%	50%	45%	45%	46%	44%	43%
	Percentage of people with diabetes for more than a year who had a serious diabetes complications (death, heart attack, stroke, surgery for circulation problem (including amputation), kidney failure) within a year. 2008/09	BETTER →	4.5	4.8	4.7	4.7	5.0	3.9	3.7	4.4	3.6	4.2	5.3	4.6	5.1	5.8	5.7
	Adjusted mortality rate (chance of death) in the year after a CHF hospitalization, 2007/08	BETTER →	36	39	39	36	35	34	32	35	35	36	42	40	39	36	35
	Adjusted rate of death per 100 heart attack patients between 30 days and one year after their first heart attack, 2007/08	BETTER →	8.8	10	10	8.6	10	7.3	7.5	8.6	7.9	11	9.2	8.7	13	11	8.6
	Hospital admission rates per 100,000 population for all ambulatory care sensitive conditions, 2008/09	BETTER →	296	378	315	257	338	294	215	246	186	277	338	268	341	551	556
Effective 3.3 Readmissions	Medical readmission rates for CHF, 2008/09	BETTER →	11	13	9.1	6.0	11	12	11	13	13	12	8.7	10	7.7	12	13
	Medical readmission rates for AMI (heart attack), 2008/09	BETTER →	5.1	5.8	4.8	4.9	4.4	7.7	3.1	4.9	4.5	5.5	4.3	3.8	4.0	7.7	7.2
	Medical readmission rates for COPD, 2008/09	BETTER →	7.7	8.9	7.3	8.0	8.6	7.2	7.4	10	5.8	6.7	7.6	7.4	8.2	7.5	7.5

* For this indicator, the best results for individual drugs after AMI admission were: statins, Central West (91%), beta blockers, South West (91%) and ACE/ARBs, Central West (85%).

= better than average   = not significantly different from average   = worse than average

Attribute/Theme	Indicator	Desired Direction	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Effective 3.7 Avoidable emergency department visits	Percentage of emergency department visits in major cities for conditions that could be managed elsewhere. 2008/09	BETTER →	3.9%	2.2%	6.2%	3.7%	6.4%	2.4%	2.7%	2.5%	3.3%	4.0%	8.0%	2.4%	4.0%	1.2%	4.2%
	Number of avoidable emergency department visits and low acuity emergency department visits per 100 LTC residents per year, 2008/09 *	BETTER →	44	45	43	37	36	44	39	45	47	49	40	48	57	48	58
Safe 4.3 Mortality in hospital	Adjusted rate of death within 30 days per 100 patients admitted for heart attack, 2007/08	BETTER →	9.8	11	11	8.6	11	9.4	10	12	11	10	12	10	12	13	10
	Adjusted in-hospital rate of death within 30 days per 100 patients admitted for stroke, 2006	BETTER →	18	18	19	20	18	13	18	17	17	18	21	17	18	19	14
Safe 4.4 Drug safety	Percentage of elderly LTC residents prescribed a drug that should be avoided in the elderly (Beers list), 2008/09	BETTER →	17%	18%	19%	15%	18%	16%	14%	14%	16%	16%	18%	13%	19%	23%	18%
Safe 4.5 Avoiding harm in long-term care homes	Rate of falls per year among LTC senior residents (aged 65+) resulting in an emergency department visit or inpatient hospitalization per 100 resident years in LTC homes, 2008/09	BETTER →	14.0	13	12	12	12	16	13	14	15	16	13	15	18	15	17
Patient-centred 5.1 Patient experience in emergency department care	Would you recommend this emergency department to your friends and family? 2008/09	BETTER ←	57%	62%	68%	56%	55%	34%	45%	56%	43%	49%	60%	64%	54%	55%	54%
Patient-centred 5.1 Patient experience in acute care hospital **	Would you recommend this hospital to your friends and family?. 2008/09	BETTER ←	74%	65%	73%	74%	71%	55%	67%	83%	73%	70%	68%	74%	70%	66%	69%
	Percentage of patients who felt they were treated with respect and dignity 2008/09	BETTER ←	82%	82%	87%	83%	80%	69%	75%	85%	81%	81%	84%	84%	86%	82%	80%
	Percentage of hospital patients who usually waited less than five minutes before getting the help they needed 2008/09	BETTER ←	73%	76%	84%	79%	70%	61%	53%	76%	74%	72%	77%	71%	79%	74%	75%
	Do you think that the staff did everything they could to help control your pain?. 2008/09	BETTER ←	50%	47%	52%	53%	52%	41%	45%	51%	51%	50%	47%	51%	52%	54%	50%
	Did you get all the medical information that you need?. 2008/09	BETTER ←	51%	48%	55%	53%	49%	43%	42%	55%	50%	48%	52%	53%	57%	55%	44%
	When you had important questions to ask a nurse, did you get the answers you could understand?. 2008/09	BETTER ←	69%	71%	75%	73%	67%	57%	60%	70%	67%	69%	72%	74%	73%	74%	61%
	When you had important questions to ask a doctor, did you get the answers you could understand?. 2008/09	BETTER ←	73%	68%	68%	75%	70%	65%	72%	77%	73%	73%	75%	75%	80%	74%	66%
	Did someone explain the results of the tests in a way that you could understand?. 2008/09	BETTER ←	69%	63%	70%	70%	69%	66%	64%	73%	69%	66%	68%	70%	72%	72%	60%

* This indicator is a combination of two indicators in section 3.7 on potentially preventable ED visits and low acuity ED visits from long-term care

** All indicator values within the theme represent patients who responded 'yes' to the questions

■ = not significantly different from average

■ = better than average   □ = worse than average

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Attribute/Theme	Indicator	Desired Direction	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Efficient 7.2 Right service in the right place	Percentage of acute care bed days that are designated as ALC, 2008/09	BETTER	16%	11%	13%	20%	24%	11%	13%	11%	13%	15%	17%	14%	19%	28%	18%
	Percentage of clients placed into an LTC home with high or very high MAPLe scores (i.e. appropriately). Jul-Sep 2009/10	BETTER	76%	73%	77%	81%	79%	77%	78%	77%	73%	77%	78%	80%	79%	61%	77%
Efficient 7.3 Avoiding unnecessary drugs and tests	Rate of pre-operative chest X-ray testing per 100 cataract surgeries. 2008/09	BETTER	4.1	3.2	3.1	3.0	3.1	3.3	4.0	5.7	5.7	4.5	3.5	3.8	3.9	3.4	11
	Percentage of elderly patients with uncomplicated hypertension treated with diuretics as a first-line treatment, 2008/09	BETTER	31%	30%	37%	37%	30%	27%	27%	29%	27%	25%	40%	37%	35%	33%	40%
Appropriately resourced 8.4 Health human resources	Supply of family doctors per 100,000 people. 2008		87	63	82	80	78	62	72	137	81	68	105	115	89	95	109
	Supply of specialists per 100,000 people, 2008		97	60	108	61	102	45	59	285	70	59	109	131	55	65	70
	Supply of nurse practitioners per 100,000 people, 2009		8.6	10	11	10	8.5	1.8	2.4	14	2.4	4.5	15	11	10	22	26
Integrated 9.1 Discharge/transitions	Percentage of patients who have all the information they need after discharge from emergency department, 2008/09	BETTER	24%	26%	31%	17%	24%	19%	20%	21%	17%	21%	25%	29%	24%	26%	22%
	Percentage who know danger signals to watch for after going home, 2008/09	BETTER	49%	47%	53%	46%	54%	36%	47%	49%	46%	44%	51%	54%	49%	52%	47%
	Percentage who knew whom to call if they needed help or had more questions after leaving hospital, 2008/09	BETTER	60%	65%	71%	59%	62%	44%	48%	56%	50%	56%	65%	62%	61%	63%	58%
	Percentage who had someone explain to them how to take new medications, 2008/09	BETTER	19%	21%	21%	19%	21%	19%	16%	18%	15%	15%	16%	22%	21%	26%	18%
	Percentage who had someone tell them about medication side effects to watch for, 2008/09	BETTER	37%	43%	43%	29%	42%	37%	36%	34%	33%	34%	33%	39%	39%	48%	34%
	Percentage of patients who have all the information they need after discharge from hospital, 2008/09	BETTER	26%	25%	24%	28%	23%	24%	18%	31%	29%	23%	24%	27%	25%	27%	22%
	Percentage who know danger signals to watch for after going home, 2008/09	BETTER	59%	57%	59%	62%	57%	51%	50%	65%	57%	55%	55%	60%	61%	61%	56%
	Percentage who had someone explain to them the purpose of medications, 2008/09	BETTER	71%	71%	72%	74%	69%	65%	69%	78%	73%	70%	68%	70%	68%	71%	60%
	Percentage who had someone tell them about medication side effects to watch for, 2008/09	BETTER	41%	38%	36%	40%	36%	35%	32%	50%	42%	36%	35%	42%	36%	39%	33%
	Percentage who were told when to resume usual activities, 2008/09	BETTER	51%	47%	50%	55%	48%	46%	45%	52%	52%	49%	52%	51%	54%	52%	50%
	Percentage who knew whom to call if they needed help or had more questions after leaving hospital, 2008/09	BETTER	81%	80%	86%	82%	82%	74%	75%	84%	79%	78%	83%	79%	85%	82%	77%

Attribute/Theme	Indicator	Desired Direction	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Focused on Population Health 10.1 Healthy behaviour	Percentage of the population who smoke daily, 2008	BETTER →	16%	16%	17%	17%	17%	12%	15%	12%	11%	15%	22%	15%	20%	21%	23%
	Percentage of the population who are heavy drinkers, 2008	BETTER →	21%	25%	24%	24%	23%	13%	18%	20%	15%	16%	23%	21%	27%	29%	25%
	Percentage of the population who are obese, 2008	BETTER →	18%	23%	20%	18%	20%	15%	17%	11%	13%	18%	23%	18%	21%	21%	22%
	Percentage of the population who are physically inactive, 2008	BETTER →	50%	54%	48%	52%	47%	61%	53%	50%	55%	54%	44%	42%	46%	44%	39%
	Percentage of the population with inadequate fruit and vegetable intake, 2008	BETTER →	59%	64%	57%	62%	60%	55%	55%	58%	60%	62%	58%	56%	65%	60%	64%
Focused on Population Health 10.3 Sexual health	HIV incidence per 100,000 people, 2007	BETTER →	8.3	3.6	3.5	3.4	5.8	4.1	4.2	42	4.7	4.4	2.3	12	1.4	4.6	6.0
Focused on Population Health 10.4 Preventive measures	Percentage of Ontario women aged 50 to 69 who reported having a mammogram in the two years prior to the survey, 2008	BETTER ←	73%	82%	69%	68%	72%	61%	72%	77%	81%	71%	64%	77%	79%	70%	77%
	Percentage of Ontario women aged 20 to 69 who reported having a pap test in the three years prior to the survey, 2008	BETTER ←	80%	83%	78%	80%	81%	79%	74%	82%	80%	78%	82%	82%	84%	81%	79%
	Percentage of people aged 50 to 74 who reported having a fecal occult blood test in the two years prior to the survey, 2008	BETTER ←	31%	36%	32%	34%	34%	29%	35%	24%	25%	30%	30%	40%	30%	32%	31%
	Percentage of women aged 65 who had a bone mineral densitometry test since turning 55 years of age, 2008/09	BETTER ←	80%	71%	73%	81%	83%	83%	87%	84%	87%	83%	75%	83%	81%	71%	56%
Focused on Population Health 10.5 Deaths and harm that could be avoided by prevention	Acute myocardial infarction (AMI) incidence per 100,000 people aged 20 and over, 2008/09	BETTER →	210	237	237	225	256	206	163	165	155	197	237	192	233	297	349
	Rate of emergency department visits for intentional self-harm per 100,000 people, 2008/09	BETTER →	88	79	106	123	106	66	65	68	47	86	122	85	106	160	228
	Rate of injury-related hospitalizations per 100,000 people, 2008/09	BETTER →	354	364	466	382	408	281	281	307	256	317	314	319	486	592	680

= better than average   = not significantly different from average   = worse than average

Success study:
Emergency department wait times at Credit Valley Hospital

Situation:
Credit Valley Hospital (CVH) has a busy emergency department, with volumes and wait times increasing each year. When patients arrive, they are classified CTAS I, II, III, IV or V, depending on the severity of their condition. In March 2005, CVH implemented a Rapid Assessment Zone (RAZ) for CTAS III patients, which successfully reduced their length of stay in the emergency department. The next step was to address increasing length of stay for higher acuity CTAS II patients. *

Aim:
Decrease the total time spent in the emergency department by CTAS II patients, despite an increasing volume of emergency department visits, by July 2009.

Measures:
- Average time to physician assessment
- Average time from triage to disposition (discharge or admission)
- Percentage of emergency department patients who left without being seen
- Patient satisfaction based on surveys ("How would you rate the care you received in the emergency department?")

Changes:
- Created a designated area within the emergency department with its own stretchers and chairs — called the Treatment and Assessment Care Centre (TACC) — to provide safe, efficient and timely access to care for CTAS level II patients and a select group of additional patients
- Adjusted team roles and responsibilities with the addition of the following:
  - A registered nurse lead, who managed flow in the TACC
  - An emergency department technician, who initiated laboratory tests, ECGs and intravenous lines under the direction of a registered nurse
  - A dedicated unit clerk, who took primary responsibility for processing emergency department orders
  - Four hours of porter time to improve diagnostic imaging turnaround times and allow patients to be brought in earlier from the waiting area
- Designated specific staff ("flow facilitators") to monitor emergency department wait times and set priorities for assessment and treatment
- Invested in portable phones so clerical staff could remain in the TACC
- Improved the emergency department tracking system to monitor each patient's length of stay

QI team:
The emergency department clinical leader was identified as the project lead. Team members included an emergency department physician, charge nurse, staff nurse and unit coordinating assistant.

Results:
Because patients with the same acuity and needs are concentrated in one area, staff spend less time moving from one place to another and more time attending to patients. As a result:

- The percentage of CTAS II patients discharged or admitted within eight hours improved to 72% in July 2009 from a baseline of 67%, and has remained above that level ever since, despite an estimated 15% increase in CTAS II patient volumes.
- Patients are more positive about the quality of care they receive in the emergency department, with overall satisfaction ratings rising to 83% from 65% in 18 months.
- The number of patients who left before they could be seen by a physician has declined to below the 3% target rate.

Average time to physician assessment and from triage to disposition

Percentage of emergency department patients who left without being seen

Next steps:
The emergency department team continues to look for new ways to improve quality. It is now working on decreasing time to specialist consultations, creating a documentation inventory, standardizing work flow for all areas of the emergency department, getting the physician involved at triage, and developing care plans that include the patient and family in decision-making.

* The Canadian Triage and Acuity Scale (CTAS): Level I – Resuscitation (the most acute); Level II – Emergent; Level III – Urgent; Level IV – Less Urgent; Level V – Non Urgent (the least acute)

Success study:
Primary care at Athens District Family Health Team

Situation:

The Athens District Family Health Team (FHT), located within the South East LHIN, serves 3,500 rostered and 300 unrostered patients. In November 2008, the team was experiencing a wait time of 27 days, as measured by the time to the third next available appointment. As a result, the registered nurse had to do telephone triage to fit patients into an already double-booked schedule or offer telephone advice. Long wait times meant the practice's receptionists also experienced stress, fielding a steady stream of calls from anxious patients.

Aim:

Implement same-day scheduling by April 1, 2009 (i.e., wait time of zero days for appointments), maximize office efficiency so that patients are seen on time for their appointments and within a 45-minute period (with 60% of that time spent with a provider), and ensure that patients see their own primary care provider more than 85% of the time.

Measures:

- Average time to third next available appointment
- Office visit cycle time (total time spent by patient in the office from arrival to departure)
- Patient time spent with a provider (value-added time) as a percentage of the office visit cycle time
- Percentage of patient visits where the patient saw his or her primary care provider

Changes:

- Staff met weekly to discuss goals, measurements, challenges and results and implement changes through the Plan-Do-Study-Act process
- Worked down the backlog of appointments by creating 30 extra patient appointments with the physician each week, aiming to arrange appointments the same week they were requested and not pushing any new appointments beyond April 1, 2009
- Cultivated an internal culture that supports quality improvement and respects patients' time, including an emphasis on doing today's work today and scheduling early in the day (to allow same-day appointments for patients who call in the morning) and late in the week for follow-up appointments (because the first part of the week tends to be busier with phone calls)
- Stocked all patient rooms with a complete set of identical supplies and equipment
- Invested in an electronic medical record (EMR) to reduce documentation and file retrieval times
- Explained the changes through a patient brochure and local newspaper advertisement
- Implemented processes to measure success, including a time sheet for patients to complete

QI team:

The Athens District team includes one family physician, two nurse practitioners and one half-time social worker in partnership with the Quality Improvement & Innovation Partnership (QIIP).

Results:

On April 1, 2009, the wait time to the third next available appointment dropped to zero days from the baseline of 27 days, and it has remained between zero and two days ever since. In addition, the team noticed a significant decrease in time spent on telephone triage for patients who previously couldn't be scheduled in a timely manner. Furthermore, the number of patients seeing their primary care provider as a percentage of total patient visits was maintained above the goal of 85% each month (except for two months due to staff vacations). The FHT has kept the office visit cycle time to 33 minutes, below the target of 45 minutes, and value-added time has been maintained at 61% (at target).

Average time to third next available appointment

Office visit cycle time

Next steps:

Athens District continues to track each of its measures weekly and average them monthly to prevent a relapse to old scheduling habits. The team is also testing other strategies to balance supply and demand, including group medical appointments for patients with diabetes and maximizing the scope of practice of the entire care team. They plan to spread their efficiency measures to other providers within their region.

Success study:
Chronic disease management at New Vision Family Health Team

Situation:

New Vision Family Health Team is a busy primary care practice in Kitchener, Ontario. On average, outcomes for patients in the practice who had been diagnosed with type 2 diabetes were not meeting clinical best practice guidelines. The team realized it needed to redesign its chronic disease management system to improve care for these patients. Initially, they focused their efforts on one senior physician's roster of 70 patients with type 2 diabetes.

Aim:

Meet or exceed current diabetes clinical best practice guideline recommendations to improve outcomes for patients diagnosed with type 2 diabetes.

Measures:

See the Results section for the four process and five outcome measures New Vision used.

Changes:

- Created a care map for patients with type 2 diabetes to change the way patients engage in the management of their disease:
- Referred patients with newly diagnosed or poorly controlled type 2 diabetes or pre-diabetes to a Diabetes Education Program led by a registered dietitian
- Provided individual follow-up with a nurse practitioner and registered dietitian within one month of the group session, then ongoing follow-up as needed until patients are stable
- Scheduled appointments with a nurse practitioner or physician, on alternating visits, every three months after patients are stable
- Redesigned the custom assessment form clinical staff use to collect patient information for the EMR to trigger appropriate questions
- Created a diabetic registry to identify clients not seen in more than six months and book blood tests and follow-up appointments
- Acquired medical equipment (Neuropen®) that allowed allied health professionals within the practice to thoroughly examine patients' feet; patients were also asked to take off shoes and socks in advance, to ensure prompt foot examination
- Maintained standardized charting for all allied health professionals, enabling them to track dates of a patient's most recent eye and foot examinations and discussions about self-management goals
- Embraced a team approach to delivering care that better utilized each provider's scope of practice

QI team:

The New Vision team includes 10 physicians, two nurse practitioners, three registered nurses, three registered practical nurses, one pharmacist, one dietitian and two social workers in partnership with the Quality Improvement & Innovation Partnership (QIIP).

Results:

New Vision achieved improvements in all but one measure within a period of 18 months.

Percentage of diabetes patients with:	Target	Baseline	August 2009
A1C < 7	>60%	50%	62%
LDL < 2.0 nmol/l	>65%	17%	33%
BP < 130/80	>55%	51%	71%
On ACEI or ARB	>60%	30%	61%
Retinopathy screening in past 24 months	>90%	17%	60%
Comprehensive foot exam in past 12 months	>90%	17%	74%
A1c test in past 6 months	>90%	51%	80%
Microalbuminuria screening in past 12 months	>65%	28%	84%
Documented self-management goals in 12 months	>70%	17%	74%

Process measures of improving diabetes management, New Vision Family Health Team

Percent of diabetes patients with:
- A1C test in the past six months
- Retinopathy screening in the past 24 months
- Comprehensive foot exam in past 12 months
- Microalbuminuria (ACR) screening in past 12 months
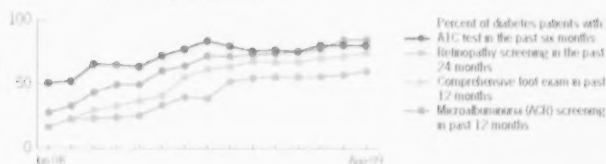
Outcome measures of improving diabetes management, New Vision Family Health Team

Percent of diabetes patients with:
- A1C < 7
- Self management goal set in last 12 months
- BP < 130/80
- ACEI or ARB drug
- LDL < 2.0 nmol/l
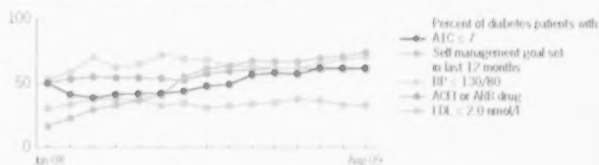
Next steps:

New Vision will continue to work on improving clinical outcomes, including LDL levels (the one measure that did not improve), using Plan-Do-Study-Act quality improvement cycles. For example, the team is currently testing a linkage with community optometrists to facilitate communication of diabetic retinopathy screening results. The team will also focus on sustaining current changes and spreading improvements to the rest of the diabetes patient population within the family health team, as well as implementing similar models for patients at risk of heart failure.

Success study:
Readmissions at North York General Hospital

Situation:
Some patients who present to the North York General Hospital (NYGH) emergency department with a mental health issue do not require admission to hospital, but rather community-based services, such as counselling, social work or crisis stabilization support services. However, ensuring coordination between the hospital and community partners is a challenge. Sometimes these patients have to stay in hospital because services that would have allowed them to return home safely could not be arranged quickly. Alternatively, sometimes patients do not follow up with support services in the community as recommended when they are discharged — leading to repeat visits to the emergency department.

Aim:
Reduce unnecessary repeat visits to the emergency department by patients with a mental health issue but who do not require admission, between May 2007 and February 2008.

Measures:
* Percentage of this type of patient who had repeat visits to the emergency department within 72 hours, between four and 28 days, and between 29 days and six months after the index emergency department visit in which they were referred to the program
* Percentage of patients with multiple repeat emergency department visits
* Averted admissions to an in-patient bed
* Patient satisfaction — overall satisfaction with emergency department care and percentage who would recommend this emergency department to family or friends

Changes:
The Emergency Department Diversion Program (EDDP) was established to seamlessly connect emergency department visitors with mental health issues who did not need hospitalization with community mental health services. In particular, it did the following:

* Referred these patients directly to a community-based crisis worker from either the St. Elizabeth Mobile Crisis Team or 310-COPE for patients outside the catchment area in York Region
* Provided time and space in the emergency department for the crisis worker to meet with the patient before discharge, assess the crisis, develop a support plan and connect the patient to immediate and intensive crisis management services in the community for up to two weeks of care, with additional management available when required
* Embedded these crisis workers as part of the team, allowing the development of stronger relationships with emergency department staff

QI team:
The team included representatives from NYGH, St. Elizabeth Health Care and Toronto North Support Services.

Results:*
From the program's inception on May 18, 2007 to February 29, 2008:

* Eighty-five patients were referred to the EDDP and saw a community-based crisis worker before being discharged from the emergency department.
* The percentage of patients referred to the EDDP who had a repeat emergency department visit between 29 days and six months decreased to 11% after they were referred to the program, from 33% prior to being seen in the program.
* Before the program started, 55% of these patients returned to the emergency department at least once; this decreased to 23% after they were referred to the program.
* More than half the referred patients (53% of 40 charts randomly selected for review) may have been admitted to an in-patient bed if the program's services had not been available.
* Patient satisfaction with the program was favourable, with 83% of patients in the EDDP reporting they were satisfied with the services they received in the emergency department, 75% finding the care received through the program to be helpful, and 75% saying they would refer someone else experiencing a mental health crisis to the St. Elizabeth Mobile Crisis Team.

Percentage of select mental health patients with repeat ED visits

Legend: Before referral to program / After referral to program
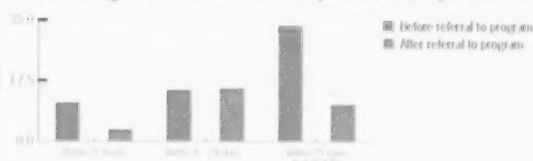
Next steps:
NYGH plans to use grand rounds, leadership meetings and the corporate intranet to spread the knowledge it gained within the hospital. It will also spread lessons learned to other hospitals in the Mental Health and Addictions Network and Central LHIN, and more broadly across the province through the Ontario Federation of Community Mental Health and Addiction Programs. The team is working on creating a paid position for peer workers to help educate patients about emergency department alternatives. Lastly, the hospital has started an outreach program to teach LTC homes various ways to prevent emergency department transfers.

*Note that the evaluation was based only on the 85 patients referred to the program and on a pre/post comparison for these patients. Comparisons do not include other mental health patients who were not in the program.

Success study:
Hospital infections

Situation:

Health care-associated infections (HAI) are infections that patients acquire while receiving treatment for other conditions. We present stories from North York General Hospital (NYGH), Windsor Regional Hospital (WRH) and Huron Perth Healthcare Alliance (HPHA) that show how well-known HAI prevention practices can be adapted to a local environment.

North York General Hospital

Aim:

Sustain 80% compliance in hand hygiene practices across all clinical in-patient units over a period of eight months starting in June 2008, and design a process to sustain a zero incidence rate for ventilator-associated pneumonia (VAP).

Measures:

- Hand hygiene compliance before and after patient contact observations
- VAP infection rate per 1,000 days on a ventilator

Changes:

For hand hygiene compliance:

- Installed more than 250 new hand hygiene rinse dispensers according to workflow requirements specified by staff and physicians, with each unit receiving their preferred product
- Educated more than 2,000 staff on appropriate moments for hand hygiene and trained more than 100 staff as hand hygiene auditors, starting with one unit
- Launched an aggressive engagement and awareness program to change hospital culture

For sustaining a zero incidence rate for VAP:

- Designed a tool known as the Daily Goals Sheet based upon the Safer Healthcare Now! VAP campaign that included prompts to ensure surveillance, identification, prevention and compliance, and made this tool part of the patient chart
- Required that signs and symptoms suggestive of VAP be brought to the attention of an Infection Control Practitioner, with a review of all potential VAP cases by an Intensivist and Infection Control Practitioner to ensure accuracy and data completeness

Results:

- Hand hygiene compliance rates improved from a baseline average of 30% to a hospital-wide mean of 83% (ranging between 74% and 90% for different units).
- NYGH sustained a zero incidence rate for VAP for two years.

Hand hygiene compliance at North York General Hospital
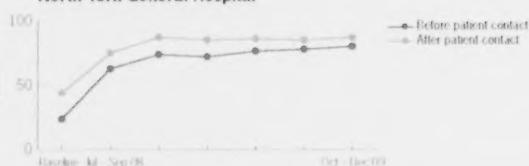
VAP infection rate per 1,000 days on a ventilator

Next steps:

NYGH will implement a plan for sustainability, including ongoing unit-based auditing, and will continue to work with units whose hand hygiene compliance has not reached the 80% target.

Windsor Regional Hospital

Aim:

Reduce the oncology unit's central line infection (CLI) rate by 50% within one year, and spread improvements across the entire organization by September 2008.

Measures:

- CLI rate per 1,000 line days
- Safer Healthcare Now! checklist completed at time of central line insertion

Changes:

The CLI "bundle" includes these best practices: hand hygiene, maximal barrier protection, chlorhexidine skin antisepsis, and optimal catheter site insertion. Implementation strategies included the following:

- Prepared insertion carts for the diagnostic imaging department, intensive care unit and operating rooms to make it easier for the physician to do the right thing, at the right time
- Hired a registered nurse to observe and record data on the diagnostic imaging department's compliance with barrier precautions during central line insertion

- Captured data electronically to assess compliance with the bundle
- Spread the CLI bundle to all units and all sites, including modifications for pediatrics and the neonatal intensive care unit

Results:

- WRH achieved zero central line bloodstream infections in adult non-critical care areas, and two infections in very complex cases in the intensive care unit in the past 15 months.
- Insertion bundle compliance improved to 100% from a low of less than 40%.

Central line infection rate per 1,000 central line days, Windsor Regional Hospital

Next steps:

WRH conducted a pilot to evaluate additional equipment shown to further reduce risk of infection (a positive displacement valve to prevent blockage and backflow of the central line), which was recently implemented in the hospital.

Huron Perth Healthcare Alliance

Aim:

Reduce surgical site infection (SSI) rate for joint replacements by 50% from baseline data and achieve greater than 95% compliance with best SSI practices between September 2007 and June 2008.

Measures:

- SSI rates for past and present joint replacement surgery cases assessed at 30 days, six months and 12 months
- Percentage of patients receiving timely antibiotic administration

Changes:

- Implemented the SSI bundle from Safer Healthcare Now!, which includes appropriate use of prophylactic antibiotics within one hour prior to incision and discontinuation within 24 hours of surgery, and clipping instead of shaving body hair
- Administered prophylactic antibiotics in operating room instead of day surgery department

- Recorded patient's temperature at beginning and end of surgery in preparation for spread of the initiative to open abdominal surgeries
- Documented antibiotic administration time, incision time, hair removal data and temperatures in an online chart that can be reviewed in real time, with data extracted into a monthly report
- Collected and assessed discharge data on all joint replacement patients from follow-up appointment clinics

Results:

- HPHA had zero surgical site infections for joint replacement patients for most of 2009.
- By July 2009, the hospital had achieved 100% compliance with the 60-minute timeframe for antibiotic administration, and maintained it afterwards.

30 day post-joint replacement surgical site infection rate, Huron Perth Healthcare Alliance
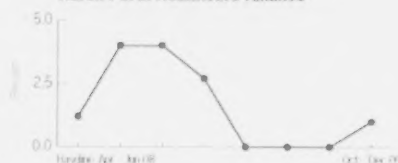
Percentage of joint replacement patients receiving timely antibiotic administration
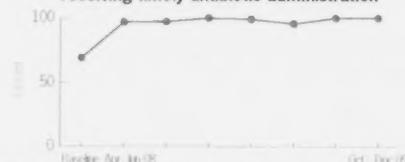
Next steps:

HPHA will roll out its process changes to other surgical services and other sites and continue to improve tracking methods for post-operative infections.

Success study:
Reducing falls in long-term care

Situation:

The City of Toronto's Long-Term Care Homes and Services Division serves more than 6,000 residents/clients in 10 long-term care (LTC) homes and various community programs. The division is firmly committed to safety and risk management, including falls prevention. Data from Toronto Public Health (TPH) shows that one in three older adults falls every year, 75% of those who fall will fall again within six months, 90% of all hip fractures among older adults are caused by falls and 20% of those who experience hip fractures die within one year.

Aim:

Reduce the number of falls resulting in hip fracture injury per 100 residents across all 10 of the division's LTC homes in 2009.

Measures:

- Percentage of residents who had a fall within the last 30 days since last assessment
- Rate of falls resulting in an emergency department visit or in-patient hospitalization per 100 residents
- Rate of falls resulting in a hip fracture per 100 residents

Changes:

The division implemented the following strategies:

- Developed an interdisciplinary approach to falls prevention and management
- Enhanced information technology to track, analyze and benchmark data on falls
- Performed a comprehensive falls risk assessment on each resident within 24 hours of admission
- Established an enhanced care plan and interdisciplinary assessment for residents assessed to be at high risk of falling
- Ran education campaigns on falls prevention, including brochures (Just for Families), the "Twelve Tips to Prevent Falls" program for Residents' Councils, and a falls prevention conference for residents at high risk and their families
- Developed a range of muscle-strengthening, balance, exercise and relaxation programs — rather than solely focusing on mobility
- Implemented equipment solutions, including high-low beds, floor mats beside beds to reduce the severity of falls from beds, hand rails and grab bars, raised toilet seats, hip protectors, etc.
- Improved lighting and efforts to reduce trip hazards and remove obstacles or unintended barriers
- Performed more frequent monitoring of residents during acute illness and following surgery to provide assistance navigating to and from toilets

- Instituted regular interdisciplinary nutritional reviews and medication reviews

In addition, two homes have tested and implemented a "falling leaf" logo for residents at high risk for falling. The logo is placed on residents' room doors, mobility devices and healthcare records as a visual cue.

Results:

Compared to the 2008 baseline, the division was able to reduce hip fractures by 33% in 2009.

Percentage of residents who had a fall within the last 30 days of their most recent assessment

Rate of falls resulting in an emergency department visit or in-patient hospitalization per 100 residents

Rate of falls resulting in a hip fracture per 100 residents

Next steps:

The division will continue to improve its falls reduction strategies using evidence-informed best practices. It will monitor, analyze and assess each fall, implement individualized strategies for residents and share successes at the home and divisional level.

Success study:

Managing alternate level of care at Trillium Health Centre in partnership with the CCAC and LHIN

Situation:

Trillium Health Centre is a large academic-affiliated hospital within the Mississauga Halton LHIN that serves a catchment area of over one million residents and is a regional centre for advanced cardiac and neuroscience including stroke and vascular care, as well as sexual assault and domestic violence. Trillium was struggling to flow admitted patients out of the emergency department as its alternate level of care (ALC)[1] cases increased. The number of ALC cases peaked at 131 in March 2009, representing about 18% of the hospital's beds.

Aim:

Reduce ALC cases from March 2009 onwards.

Measures:

- Number of ALC patients per day
- Number of ALC patient days

Changes:

- Established a Joint Discharge Operations group where Trillium's discharge planning staff and CCAC case managers work together as one team, reviewing all ALC patients awaiting placement on a daily basis and assigning them to streams such as home first, chronic, chronic palliative and rehabilitation. The daily reviews ensured that any new information about a patient was communicated and acted upon immediately
- Coordinated a three-day Kaizen event with the CCAC and LHIN, which used Lean methods to complete a value stream analysis of the current state. This analysis showed that only 20% to 27% of the steps and time taken for discharge planning added value to the patient. A future value stream analysis identified opportunities for eliminating steps and standardizing discharge practices
- Developed key protocols for implementing "Home First," an initiative in Mississauga Halton LHIN that aims to have patients who are admitted to hospital return home after discharge from acute care. The goal of the program was to leverage supports from CCAC and Aging at Home investments to ensure patients were able to return to the appropriate environment with necessary supports, thereby deferring the decision or process to place patients into LTC inappropriately
- Ensured patients received full assessment and review by Trillium and the CCAC to ensure that all necessary supports were implemented in the right care environment to support safe care post discharge. Successful implementation depended on getting physicians on board with a consistent message about going home first before LTC placement
- Implemented utilization software (Medworxx) to determine more accurately when a patient should be deemed ALC

- Tightened the approval process for placement on the ALC LTC list, to reflect the philosophy that LTC should only be considered after all other alternatives had been exhausted
- Introduced the role of Patient Navigator to assist with discharge planning
- Discussed the challenges associated with hard-to-serve/hard-to-place patients and created protocols and documents to assist Trillium and CCAC staff in handling these cases
- Developed tools for staff, patients and families to facilitate a safe and timely discharge to the most appropriate destination

Results:

Trillium reduced its ALC beds to fewer than 55 (7% of beds) in March 2010 from 131 (representing 18% of the hospital's beds) in March 2009. This represents a 67% reduction in ALC cases. This initiative has also strengthened the partnership between Trillium and the CCAC, streamlined transitions for patients from acute care to an appropriate community setting and reduced the average discharge time.

Total number of ALC patients per day

Total ALC patient days per year
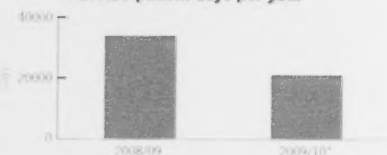
Next steps:

Trillium Health Centre continues to refine protocols, roles and procedures related to discharge practice to improve the transition from acute care and spread improvements, such as the Patient Navigator role, across the entire organization. The hospital continues to work closely with the CCAC to improve its discharge processes and its opportunities for enhancing partnership with the LHIN.

[1] An ALC bed is occupied by a patient who does not require the intensity of resources or services provided in that specific care setting
[2] Mar 09 is an estimate based upon past 3 months

Success study:
Workers' health at Oakville-Trafalgar Memorial Hospital

Situation:

In 2007, the in-patient psychiatric unit at Oakville-Trafalgar Memorial Hospital was experiencing high rates of nurse absenteeism due to illness, high staff turnover and, therefore, a heavy reliance on agency nurses who were not trained to work with mental health patients. As a direct result of these issues, the unit was reporting above-average use of physical and chemical restraints and frequent code whites (incidents of violent or aggressive behaviour).

Aim:

Significantly reduce staff absenteeism/sick days to below the rest of the hospital (Oakville-Trafalgar is part of Halton Healthcare Services) and below the provincial benchmark (10.3 days). Reduce staff turnover rates and decrease reliance on agency nurses in the psychiatric unit to zero within one year starting in June 2007.

Measures:

- Average staff sick days per full-time equivalent (FTE)
- Staff turnover rates per FTE per year (number of staff separations as a percentage of total staff headcount)
- Agency staff hours as a percentage of total worked hours
- Staff satisfaction with supervisor, workplace safety and involvement in decision-making

Changes:

- Conducted a root cause analysis through frequent staff meetings; nurses expressed concern about work-life balance, safety issues on the unit and their ability to contribute to decision-making
- Increased the presence of the director, manager and professional practice clinician to assist staff in solving daily operational issues — e.g., supporting nurses in patient case load or bathing patients
- Cultivated a collaborative environment by encouraging nurses to share their improvement ideas and give feedback at weekly staff meetings, as well as publicly posting minutes of staff meetings and progress reports
- Provided nurses with additional training in mental health patient care and therapeutic communication
- Allowed nurses to develop their own work schedule to meet their and the unit's needs so they could achieve a better work-life balance
- Introduced the new role of Mental Health Security Officer, who became part of the in-patient multidisciplinary team

QI team:

The psychiatric unit's director, patient care manager, professional practice clinician and nurses participated in this quality improvement initiative.

Results:

- Average staff sick days per FTE per year decreased to eight days from 16 between mid-2007 and December 2008.
- Staff turnover rates decreased to 3% from 39% between 2006 and 2009.
- Agency staff hours as a percentage of total worked hours decreased to zero hours from 9,426 hours between 2007 and 2008.
- Staff reported greater satisfaction with their supervisor, workplace safety and involvement in decision-making.
- Code whites and the use of physical and chemical restraints declined dramatically.

Average sick days per FTE per year*
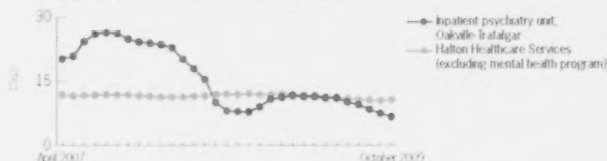
Staff turnover rate, inpatient psychiatric unit, Oakville-Trafalgar Memorial Hospital

Next steps:

Psychiatric unit management continues to look for additional ways to support staff so they can handle the rising numbers of beds, patient volumes and severe cases — for example, by offering specialized training in areas such as concurrent disorders. With its newly stabilized workforce, the unit is working to further reduce its use of chemical restraints and is streamlining the clinical documentation required for mental health patient cases so nurses can spend less time on paperwork and more time delivering patient care. The mental health program has also developed care plans to ensure staff follow a consistent approach to aggressive client behaviour, and management will continue to participate in staff meetings and maintain a strong presence in the psychiatric unit.

Success study:
Mental health case management in Thunder Bay

Situation:

The mental health case management referral process in Thunder Bay was causing client confusion, duplicated efforts and wasted resources. Some clients were referred to several case management programs at once, leading to multiple intake assessments. Others were referred to inappropriate programs and waited in the "wrong line" before finding out they had to start over on a different program's wait list. In December 2006, MOHLTC's Performance Improvement Fund allocated funding to help local providers use quality improvement tools to systematically redesign the intake model.

Aim:

Eliminate referral duplication and achieve a 50% reduction in wait times from referral receipt to program placement over an 18-month period.

Measures:

- Percentage of referrals submitted on the new referral form
- Number of referrals bypassing the common intake process
- Percentage of referral dispositions completed by the intake coordinator
- Median wait time from referral receipt to disposition to a program wait list

Changes:

- Conducted process mapping of the old system, identified bottlenecks or inefficiencies, and designed a desired new process
- Developed a common referral form for mental health services. A committee to oversee this work met every week. A trial referral form was first piloted with key individuals and subsequent versions were made shorter
- Created a Referral Review Committee (RRC) to review referrals and determine program disposition (i.e., assign the referrals to a program)
- Hired an Intake Coordinator, who assumed the role of referral disposition, with the RRC committee available for consultation as required
- Implemented a computerized database of referrals
- Created Articles of Agreement outlining processes for consistency and follow-through

QI team:

Thunder Bay Mental Health Case Management Intake Collaboration (the Collaboration) included nine mental health and addiction case management programs within four organizations: St. Joseph's Care Group, Thunder Bay Regional Health Sciences Centre, Alpha Court and the Thunder Bay branch of the Canadian Mental Health Association. An Executive Committee included representatives from each organization. Management teams and frontline staff at the nine partnering case management programs also received quality improvement training.

The Executive Committee met on a monthly basis, secured resources to staff the new service (Intake Coordinator) and established two subcommittees to begin the work towards a common intake process.

Results:

The Collaboration's efforts have eliminated referral duplication, reduced intake workload by 50% and boosted successful referrals to 95%. Most important from the clients' perspective, the average wait time from referral receipt to disposition to a program wait list has declined by 55%. In addition, clients benefit from a single point of entry and, in most cases, tell their story once rather than multiple times to different case managers.

Median waiting period
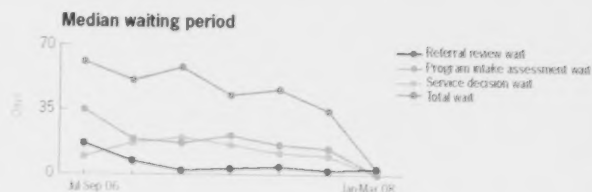
Next steps:

Potential next steps include using collected system-wide data to identify and address hard-to-serve client needs; designing an abbreviated referral form, which has since been received with praise from our community partners; developing a common wait list management methodology and continuous process for performance measurement; and continuing to advance the use of quality improvement methodology at all four participating organizations. A rapid re-entry system, consistent across all programs, has already been developed to make it easier to discharge clients, knowing they can quickly be reintegrated if they require services again. The longer the nine programs work together, the better they understand each others' services, and the more opportunities for improvement they identify.

13 Endnotes

1. The Canadian Triage and Acuity Scale (CTAS) is a standard tool used by emergency departments in Ontario. Patients are classified by a triage nurse into the following categories: 1 (resuscitation), 2 (emergent), 3 (urgent), 4 (semi-urgent) and 5 (not urgent).
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These indicators represent bloodstream infections only, which are a small percentage of the total number of infections that can occur in the body (e.g., in bones, joints, on skin, etc.). For example, bloodstream infections represent only 5% of all MRSA infections at some hospitals (personal communication, Dr. Michael Gardam, UHN).

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14 Acknowledgements

15   Members of the Ontario Health Quality Council

Board

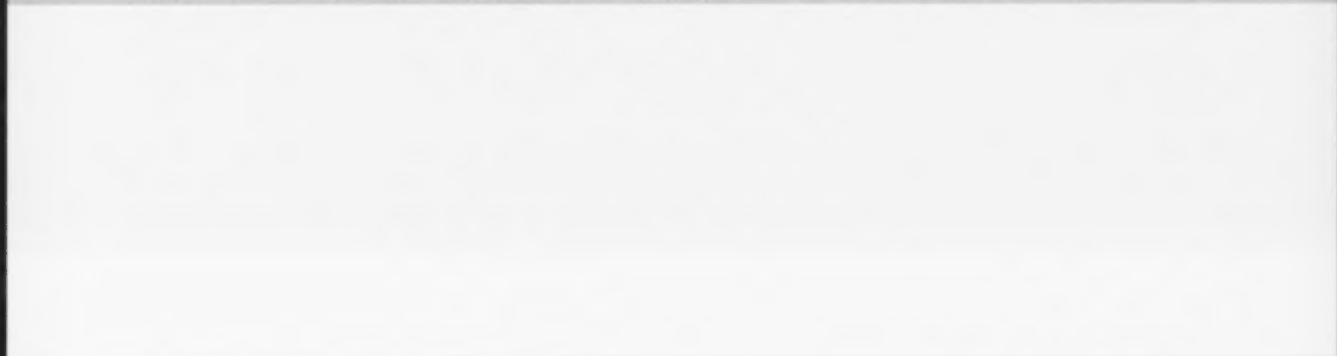|	
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Eileen Patterson	*Director, Quality Improvement*

Mandate

The Ontario Health Quality Council is mandated under Ontario's *Commitment to the Future of Medicare Act* to inform Ontarians on the status of our publicly funded health system, including access to health services, health human resources, the health of Ontario's population and health system outcomes. The Ontario Health Quality Council also supports continuous quality improvement in the health system.